

THE *Soybean Digest*



—Photo by Minnesota Division of Publicity
You can combine fishing with ASA convention. See page 11

Official Publication

AMERICAN SOYBEAN ASSOCIATION

VOLUME 9 • NUMBER 8

JUNE • 1949



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THE Soybean Digest

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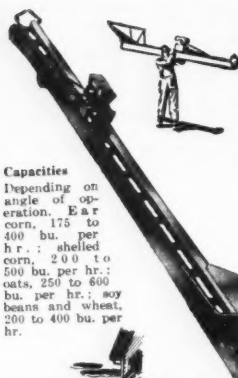
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EDITOR'S DESK

STOPPED ON 1 YARD LINE?

As of June 1 the effort to repeal the federal margarine laws had once more been stopped on the 1 yard line—at least for the time being.

As we previously reported, the U. S. Senate finance committee reported out a margarine bill essentially the same as HR 2023, previously passed by the House. This bill would eliminate all federal taxes and license fees, including those on colored margarine.

The finance committee recommended that the bill be put on the Senate calendar. This had not been done up to June 1. Every day's delay lessens the bill's chances of passage. Observers believe that it must be placed on the calendar soon if it is to pass. Otherwise it will be buried in a last minute jam of business and with the threat of a filibuster by certain dairy Senators hanging over it.

By failure to act on the margarine bill the Senate is jeopardizing the market for soybean oil at a time when the price of soybeans is very sensitive to all market reactions, and at a time when the 1949 crop is going into the ground.

If the Senate fails to act on the margarine issue, its record will be identical with that of the last session. In that session a repeal bill passed by a large majority in the House was allowed to die in the Senate.

There is, however, one difference between this Congress and the last one. The majority of its members were elected on a platform of repeal of the margarine laws. The President was also committed to repeal prior to election. The present administration has a definite obligation in this matter that was not true a year ago. The obligation can only be discharged by passage of HR 2023 by the Senate.

CAN HAVE A GOOD TIME IN MINNESOTA

It will be easy to combine a little relaxation—and mayhap fishing or swimming—over the long Labor Day weekend with attendance at the American Soybean Association convention this September.


Your convention was planned at Minneapolis-St. Paul in the land of 10,000 lakes with that thought in mind. See pages 11 and 12 for details on the Minnesota vacation land, also for information on whom to write for further details and reservations if you wish to take advantage of this opportunity.

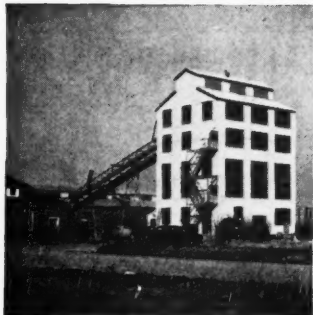
Convention opens the day after Labor day with headquarters at Hotel Nicollet in Minneapolis.

The Digest will have more complete details in the July and August issues. In the meantime be sure to mark down the dates, Sept. 6, 7 and 8, on your calendar.

SOYBEAN DIGEST

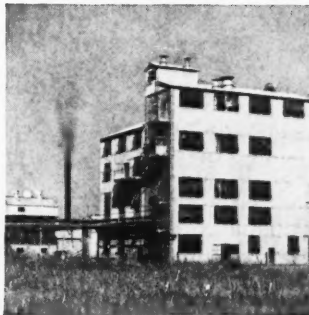
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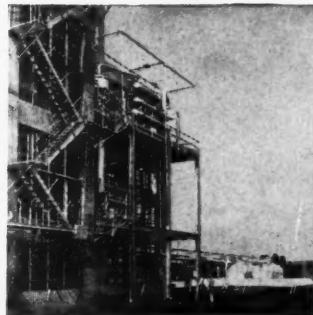
COTTONSEED

"First of its kind in the world" — that was the newspaper story on the above cottonseed oil mill when it started production in March, 1947. It's the Delta Products Company plant for continuous solvent extraction of cottonseed oil, located in Wilson, Arkansas. Allis-Chalmers engineered and supplied equipment for this 200 ton per day mill. And production records show that it has been operating continuously and profitably ever since.



SOYBEANS

Here's the Tiptonville plant of the West Tennessee Soya Mill company. One building—divided into two sections—houses the preparation and solvent extraction equipment. Designed by Allis-Chalmers and equipped by Allis-Chalmers, this modern soybean oil extraction mill has been continuously operating since October, 1948. A-C equipment includes processing machinery, solvent extraction equipment and power and electrical machinery.



CORN OIL

New and highly successful, this Illinois mill is used for the continuous solvent extraction of oil from corn germ. It's another money-saving Allis-Chalmers installation — operating continuously since August, 1948. Processing equipment, extraction equipment and power and electrical equipment were all correlated by Allis-Chalmers to produce this efficient corn oil extraction plant. A-C engineers supervised equipment erection, employee training and initial operation.

Many Other Applications . . . The three products listed above are just a few of the many applications for which Allis-Chalmers continuous solvent extraction systems are being used. Successful tests have been made on milled corn, rice bran, peanuts, flaxseed, castor beans, fish meal, and other oil-bearing materials. Numerous plants for the continuous solvent extraction of these oils—with Allis-Chalmers systems—have already been built or are being constructed today. And many inquiries are coming in every week.

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ACTIVITIES OF YOUR ASSOCIATION

Missouri Campaign

A campaign to secure ginner and elevator backing of the American Soybean Association program was being undertaken in the Delta sections of Missouri, Arkansas and Tennessee by Paul C. Hughes, Association field service director, as the Soybean Digest went to press.

The signup campaign follows a series of meetings held by the Association in those states in April. Under the agreements signed with the Association the ginners and elevator men will collect 20¢ per 100 bushels from producers on the 1949 soybean crop in their territories.

The "Double Duty Lands" as G. H. Banks of O. H. Acoms Farms at Wardell, Mo., has dubbed the section, has become one of the nation's heavy-producing soybean areas and its producers are fully aware of the importance of a strong organization if soybeans as a crop are to meet the challenge of the times. Both grow-

ers and handlers have expressed strong interest in the Association's program.

The signup campaign follows similar campaigns in central Illinois and parts of Ohio and Indiana in 1948.

Illinois Hearing

"The butter interests claim that to permit the unrestricted sale of yellow margarine would put the dairyman out of business," said Albert B. Dimond before the House agricultural committee of the Illinois General Assembly May 3. "The Illinois dairyman since 1919 at least has been getting out of the cream-for-butter business and selling his milk in channels that have a more efficient and profitable outlet."

Dimond appeared for the American Soybean Association at the hearing on the margarine repeal bill before that body.

"There has never in any year been enough protein feeds fed to livestock

for the most efficient production," said Dimond. "It is an interesting fact that the increase in production per dairy cow in the United States has paralleled the rise of soybeans as a crop. She has increased her production per cow 25 percent in the last few years. Soybean oil meal is used extensively in dairy cattle feeding as well as in all other classes of livestock and poultry. We need soybeans for both oil and meal no matter what you may hear about saving the soil with grass and feeding it to the dairy cow. To maintain any sort of adequate diet for our people the cow is essential indeed, but I would like to suggest that she could do a better job with the addition of bean meal to her diet."

GROWERS

ROWED VS. SOLID BEANS

Today, 80 to 90 percent of the Ohio soybean acreage is drilled solid. Practically the reverse is true in Iowa and in many sections of Illinois and Indiana. Why do Ohio soybean growers continue to plant such high percentages of solid planted soybeans? The answer to this question will be based on a study conducted over a period of 2 years at 35 experimental locations in 15 northwestern Ohio counties.

There are many factors involved in answering this question. However, the writer feels that there are three of primary importance under Ohio conditions, which can be determined with some degree of accuracy before the crop is planted. These are *date of planting*, the *weed problem*, and the *productive capacity of the soil*. It is important to consider all three of these factors in making a wise decision concerning the best method of planting soybeans. In the past, weed control alone has received the emphasis.

Conditions that Favor Solid Plantings—Late planting dates (after June 10), low soil fertility, and minor weed control problems all favor solid plantings. Two factors argue for solid plantings late in the season: (1) The less chance for weeds to become a major menace, and (2) Solid planted soybeans, planted late, reach a shorter maturing height than earlier plantings. Low fertility soils also cause shorter maturing heights, plus the fact that such soils usually have fewer weeds.

Conditions Favoring Row Plantings—Early planting dates (before

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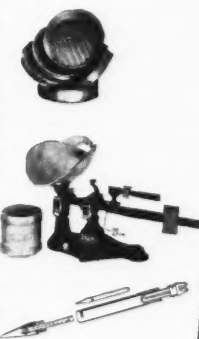
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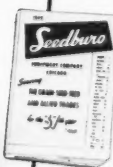
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To be forewarned of such a condition in your grain, make frequent temperature checks of stored grains, and keep a record of the readings obtained. In addition, obtain samples of grain from various points in your bins for visual examination for heat damage and infestation.

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A planting of the Harly variety (see right hand column).

May 25), high soil fertility, and a serious weed control problem argue for row plantings. In fact, because of the serious weed problem, which usually plagues early plantings, row plantings should be used in almost all situations. This is particularly true on soils of high productivity. Early plantings usually attain greater heights than later plantings, thus favoring wider row spacings without a reduction in yield.

Determining Correct Row Widths—Ohio soybean growers, in general, will take a loss in yield if they use rows more than 30 inches in width. There are some exceptions to this statement. Soils high in productivity can produce top yields with soybeans in 38 to 42 inch rows.

There are some conditions that demand the use of rows not more than 24 inches apart. Soils (and

varieties) that produce mature soybean plants less than 30 inches tall should be planted with narrow rows (20-24 inches). If the planting date is late in June, solid plantings have done as well as any method of row planting under such conditions.

To summarize the discussion on correct row width, the writer wishes to state the following rule which can be applied with considerable success under most Ohio conditions. The space between rows of soybeans should not exceed 1 inch for each inch in plant height at maturity.

Generalizing on any one cultural method for growing soybeans is very dangerous. What is correct for one set of conditions may not be correct for another.—*James E. Newman, department of agronomy, Ohio Agricultural Experiment Station, Wooster, Ohio.*

NEW CANADIAN VARIETY

The soybean variety Harly has been released by the Dominion Experimental Station, Harrow and accepted for registration by the Canadian Seed Growers' Association. The Harly variety originated from a selected segregate in a cross between Mandarin and A. K. (Harrow) which was made at this Station. This variety exhibits characters from both parental varieties in respect to maturity, plant height and stem strength.

At Harrow the Harly variety matures about 6 days later than Mandarin and 15 days earlier than A.K. (Harrow). In height Harly averages 38 inches as compared with 26 inches for Mandarin. The seed of Harly is yellow.

The characters of reasonably early maturity and medium height provide a combination which should adapt this variety to a fairly large section of the soybean growing district where earlier-maturing varieties are required. Test plots of Harly conducted in Middlesex and Haldimand Counties in 1943 indicated suitable maturity for these districts. The height of plant and strength of stem have been noted as attractive features for harvesting with a combine. Yields in the tests so far conducted have compared favorably with these of Mandarin.

Only a small amount of seed of Harly was available for planting in 1943 therefore the season of 1949 will be required to produce sufficient seed for any extensive acreage.—*C. W. Owen, assistant forage crops, Department of Agriculture Experiment Station, Harrow, Ontario.*

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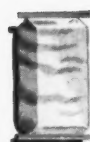
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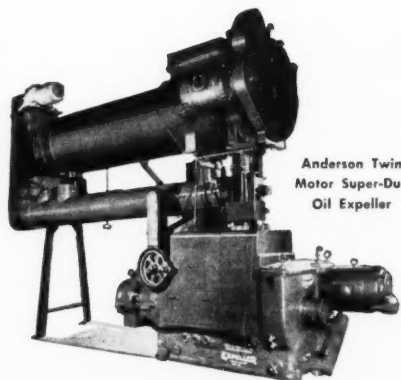
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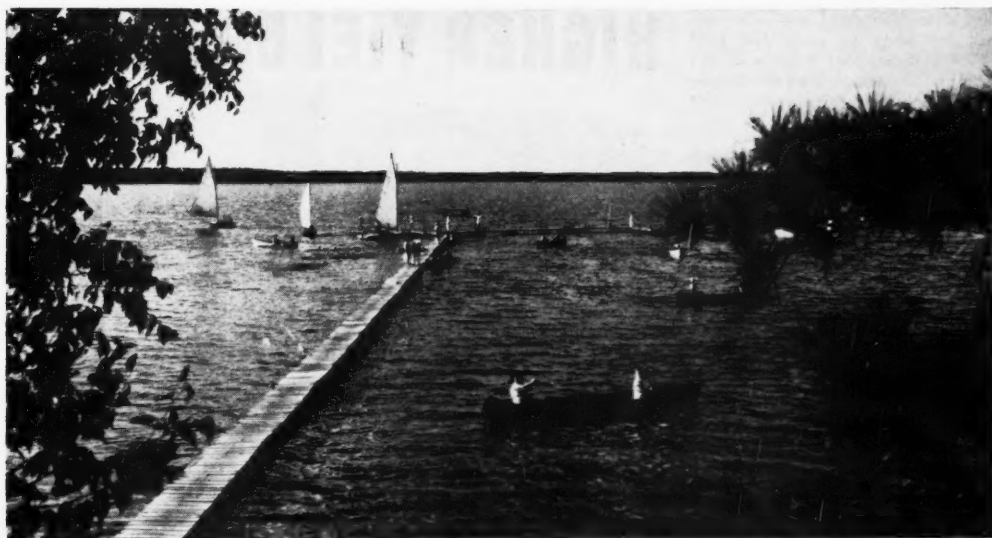
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Boating on Lake Hubert near Brainerd, Minn.

—Photo by Minnesota Division of Publicity

AT ASA CONVENTION—HERE'S YOUR CHANCE TO COMBINE

FISHING AND BUSINESS

You can combine business and pleasure when you attend the American Soybean Association convention in Minnesota this September.

Since the convention opens September 6—the day after Labor Day—you can spend the long holiday week end, or longer if you wish, at one of Minnesota's lakes or listen to the soothing of her forest pines.

Minnesota has more than 11,000 fresh water lakes totaling 3,824

square miles of water surface, more than any other state can boast. At least 4,000 of them are good to superlative fishing waters. There are several thousand miles of trout streams, 1,500 of them along the north shore of Lake Superior alone. They are known to visitors from all over the continent and abroad, more than a million of whom come to the state for vacations annually.

Recreation is Minnesota's newest, most rapidly growing and apparently inexhaustible resource. In the last year before the war tourists spent between 150 and 180 million dollars, most of them arriving for mid-summer enjoyment of temperatures that are just right for all forms of outdoor activities.

To care for these visitors there are more than 2,600 seasonal resorts and 354 hotels and resorts in regular 12-month operation, including some of the finest hotels in the country.

For the sportsman, Minnesota boasts of a larger take of a greater variety of game than any other state, public land by the thousands of square miles, and a law which declares all surface and underground water to be public property. There

are 57 state park units and the finest canoeing resources that lie outdoors.

As for waterfowl, no other state can boast so many places to hunt ducks. Although it has suffered along with the rest of the pheasant range during the last few years, Minnesota was harvesting about 2 million ringnecks a year in the early 1940's and expects soon to return to this take.

It also enjoys excellent sharp tailed and ruffed grouse hunting in the north, though subject to periodic fluctuations; Hungarian partridge in the west and bobwhite quail in the southeast.

Big Game Hunting

But really spectacular sport is afforded by Minnesota's big game, represented principally by a population of about a million white tailed deer. Despite an annual kill by hunters of 75,000 animals a year the deer are increasing to the nuisance stage, especially in the farming communities. Every county in the state now has some deer.

In contrast to Pennsylvania which estimates "big game" hunters spend \$5,000 for every black bear killed in

Circle the dates Sept. 6, 7 and 8 on your calendar.

SEPTEMBER 1949

SUN MON TUE WED THU FRI SAT

.	.	.	.	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	.

that state, Minnesota not only does not list bears as game but pays bounties to anyone who will kill them, in any season because of damage to bee hives, sheep and young cattle.

The walleye is king of game fish in Minnesota, though bass, northern pike, trout, crappies, sunfish and others are abundant. Bullheads and yellow perch are regarded as undesirable and their destruction is encouraged.

The state is conducting an aggressive campaign to clean up pollution and erosion of public watersheds and this, together with rough fish control activities, promises to make fishing still better.

Settlement and development of Minnesota is so recent that many persons still alive can recall many of the outstanding events.

Down to 1840 there was hardly a trace of settlement—just a few scattered fur trading posts, a military reservation at Fort Snelling and a handful of colonists in the Red River valley. The rest was Indian country.

There is a chain of lakes extending along the northern boundary of the state, from Lake Superior to Lake of the Woods that was used by the earliest French and English explorers and fur traders and was known as the Voyageurs Highway. One lake leads to another by means of short portages so that the route is conceded to be the best and least spoiled wilderness canoe country in America.

The pine-scented, cool clear air and lakes in the north, plus an almost complete absence of ragweed, makes the region a refuge and haven for hayfever sufferers from many states.

FOR VACATION INFORMATION

For information on the best fishing and vacationing sports in Minnesota and accommodations, write:

Verne E. Joslin, director
Minnesota Department of Business Research and Development, State Capitol, St. Paul 1, Minn.

Julius Pealt, Minneapolis Convention and Visitors Bureau, Pillsbury Building, Minneapolis, Minn.

HIGHER YIELDS FOR GREATER



—Photo by Department of Public Relations, Ontario Agricultural College
Soybean fertility test plots on the Field Husbandry Experiment Farm, Ontario Agricultural College.

By IVAN ROBERTS

SCIENTISTS HAVE accomplished much in the last 5 years to improve the "net return" or "money in the farmer's pocket" aspect of soybean growing. Scientific research programs on the industrial uses for the soybean, and its products, are continually opening up new outlets and new markets, and are making terrific strides in quality improvement. The soybean plant breeders' record is surpassed by no other group. Today we would hardly recognize varieties that, 5 years ago, topped the list. New varieties, better adapted, higher in yield, higher in percent oil, and more resistant to disease and lodging, have accomplished much in placing the crop in a more favorable "net return" bracket. The agronomists have gone far in experimentations on cultural practices. New information on inoculation, rates of seeding, weed control, nutrient requirements, etc., has brought growers millions of dollars through increased yields.

No crop responds better to good cultural practices than soybeans. But new growers must have the latest information, otherwise the chances are that they will be disappointed with the results. Furthermore, old growers are groping for the newest information that will give them that extra important bushel per acre.

The farmer who does not inoculate his soybean seed at every planting is taking an unnecessary risk. A good commercial culture costs only a few cents per acre, and the labor entailed in the inoculating procedure is negligible. It is the best kind of insurance against poor stands and low yields.

Row, Seed Spacing

With the Mandarin variety, experiments over a period of years on distance between rows, showed that the narrower the rows were the more they produced. However, the very narrow 7-inch and 14-inch rows, although giving the greatest yield, were too close for weed control measures. From this experimentation, the general recommendation should be to seed in the narrowest row that your available row-cultivation equipment will permit; if at all possible, row widths should not exceed 28 inches.

Considering 20-, 21-, 24-, and 28-inch rows, seed spaced at 1 inch in the row gave, in all cases, highest net yields. There is great variation in seed size between soybean varieties. Therefore, rather than using pounds or bushels per acre as a seeding rate, the seeder should be adjusted until seed is dropping about an inch apart in the row, and the rate in pounds or bushels per acre

TER PROFITS



Part of the campus directly in front of the Administration Building at the Ontario Agricultural College.

will take care of itself. It should be pointed out again that these tests were conducted only with the Mandarin variety, and that possibly with a weaker strawed variety, or a later, larger type, these results would not be applicable.

As a secondary but important benefit resulting from thicker seeding in the row, Mandarin changes from a low podding, poor combining variety to one that can be harvested with little or no loss of seed. The correlation between the growth data during the first 5 weeks and height of podding data is evidently a result of initial rapid growth in closely spaced seedlings, greater stem elongation, and a resulting higher positioning of the first pod on the plant.

Effect of Weeds

Weed control is, without doubt, the greatest single factor affecting yields and profitable net returns per acre. In check plots where weeds were allowed to run, where no weed

control measures were practiced, a weed count indicated a weed population of 140 weeds per square yard. Under these extremely weedy conditions the soybeans yielded a low average of 2 bushels per acre.

On plots where control treatments were given, as listed in the recommendations at the end of this article, the weed population was reduced to less than one weed per square yard. The average yield on these low weed plots was 24 bushels per acre.

These figures show conclusively that soybean yields were drastically reduced by weed competition. The experiment also proves that the weed problem, even in the most severely weed-infested soybean fields, is simply a problem of good weed management through cultural practices. On the basis of the 1943 average price for soybeans, each weed control operation in the experiment increased gross returns by \$11.00 per acre. Good weed control practices will remove your soybeans from merely an average paying crop to the best crop proposition on your farm.

Weed Control Implements

In large scale growing, the rotary hoe with its speed of operation is no doubt the most efficient implement in weed control. Insofar as weed eradication alone is concerned, no one implement has proved itself better than another in this experiment. Weed control is more a question of the timeliness of the treatment regardless of which of the implements is used.

The rotary hoe, when functioning properly, should turn over the top crust of soil completely. To obtain this most favorable condition the speed to drive will depend on the soil type. On heavy or crusted soils the rotary hoe may have to be weighted for best results. With the rotary hoe, most efficient weed control was obtained with each section weighted with 100 pounds and travelling at a speed from 10 to 12 miles per hour. With the weeder, the best speed was found to be 5 to 6 m.p.h., and with the harrow, 3 to 4 m.p.h.

The harrow can be used without any damaging effects until the soybeans are 7 to 8 inches, the weeder and rotary hoe until the soybeans are 8 to 10 inches high.

Recommendations for Control

1. Plant in rows rather than solidly. There is not the same opportunity for destroying weeds in solid plantings as there is in row-planted soybeans. Only in rare cases, where

the field history indicates no weeds, should solid planting be practiced.

2. Carry out *timely* weed control measures. The need of these *timely* measures is indicated by weeds themselves and moisture conditions. If weeds are allowed to grow until they are firmly rooted they will withstand harrowing, etc., almost as well as the soybeans themselves. Harrowing, weeding, or using the rotary hoe under damp conditions and sunless days only serves to change the position of weeds. These implements disturb the weeds and expose their roots to the sun. It is the burning rays of the sun that actually do the greater part of the killing.

3. The first treatment should be given when the weeds are in the white. Finger over the top crust of soil, and if it is full of white, thready structures, these are weeds just coming through. If these are disturbed and brought to the top a large percentage of weeds are destroyed then and there. This stage may occur before the soybeans are up, while they are coming through, or when they are just up.

4. A second treatment should follow when the weeds are just showing through the ground, and successive treatments should be given at similar stages of weed development until the soybeans would be so high as to be severely damaged by such vigorous control measures.

5. These treatments are best carried out in the heat of late morning and during the afternoon, when the soybean plants are in a wilted condition, and hence have a smaller tendency to break off.

6. When the soybeans are too tall for harrowing, etc., row cultivation should be practiced. The number of times through will depend on the weed conditions of the particular field.

7. Row cultivate to kill weeds only. Too deep cultivating too close to the rows will destroy valuable soybean roots.

8. Soybeans will withstand the most vigorous control treatment, and although immediately after harrowing, etc., they will look miserable and near ruin, by the following morning they will have regained their previous healthy appearance.

9. Good weed control is not being carried on unless some soybean plants are being destroyed in the process. Seeding at least a bushel per acre, one allows for such killing and still ensures a good stand of soybeans.

● Mr. Roberts, assistant in research in the department of field husbandry, Ontario Agricultural College at Guelph, is sponsored by Victory Mills Ltd., of Toronto. Written from the Canadian viewpoint, much of the article applies to other soybean-growing regions as well.



The author is experimenting with soybean growing in submarginal land like this in California. Corn was planted here but made only a spotty growth as you can see. White area in center is alkali.

SOYBEAN EXPERIMENTS *in California*

Soybean production in California has always been negligible. This is due to one of several reasons. The state is essentially semi-arid, depending mainly on irrigation. The best season of the year for planting soybeans is usually the driest in California, and those who have been potential soybean growers have not planted them because of the cost of irrigation in the more arid regions of the state.

Another reason for the lack of interest in soybeans has been because of the land itself. Soybeans grow best in a humid, moderately warm climate, but it so happens that such areas also raise good wine grapes, fruit and other more profitable crops. Good grape and fruit-growing land sells for \$500 to \$2,000 per acre, depending on the location and whether planted or not. The potential yield of soybeans, even at the best, is not great enough from such land to justify planting them in preference to grapes, even where 3 to 4 years are required for the first good crop of grapes.

There are, in California, large areas of land that may be considered sub-marginal at the present time. At least they will not support high-profit crops. Much of this land receives a good rainfall and much of it can be irrigated.

It has been the writer's feeling that soybeans would be an excellent crop on such land and that if planted twice or even three times per year will pay dividends. With this in mind experiments were conducted over a period of three plantings, and are still going on, to determine the results outlined here.

The land used was typical of that referred to that exists in the coastal

By J. R. McCAUGHNA

area of California in the Santa Clara and San Joaquin valleys. Nothing had ever been grown on the land. It was somewhat alkaline and hard-packed. After pulverization a quantity of cannery waste mixed with peat moss was simply plowed under. This waste consisted of pear, peach and vegetable peelings, cores and discarded fruit and vegetables. It accomplished two purposes. First, organic matter was added to the soil and, second, the alkalinity was reduced. After standing for 30 days the soil was planted.

The first planting took place in April and consisted of the varieties Ogden, Volstate, S-100 and Lincoln. They were inoculated and planted 3 inches apart in rows that were 24 inches apart. One acre was devoted to each variety. There were a total of three rains during the first crop, the first coming a day after planting. One irrigation was necessary with the first crop and none with the other two.

The second crop was planted 125 days later and the third 150 days after harvesting the last of the second crop. No fertilizer was added to the soil at any time except that the leaves and stems were plowed under after each crop had been harvested. Since shattering of the beans is apt to be more severe in California's arid climate, the beans were picked while still slightly green.

Not all of the varieties matured at the same time, of course. Each was harvested just prior to absolute maturity and the next crop was not planted until all four varieties had been harvested.

The conclusion that may be drawn from the first effort of planting three crops per year is, that of the four varieties planted the S-100 and the Lincoln were the best for this area.

Soybeans can be grown in California to produce satisfactory yields on poor land. With the soybean playing an increasingly more important part in our economy, it would seem reasonable to suppose that California and possibly other states in the west may become moderate producers in the future.

	S-100	Lincoln	Ogden	Volstate
Date Planted (1st crop)	4-10-47	4-10-47	4-10-47	4-10-47
(2nd crop)	8-12-47	8-12-47	8-12-47	8-12-47
(3rd crop)	1- 9-48	1- 9-48	1- 9-48	1- 9-48
Weight of seeds	2750 lb.	3800 lb.	3250 lb.	3025 lb.
Yield/Acre (1st crop)	2055 lbs.	1920 lbs.	1460 lbs.	940 lbs.
(2nd crop)	1710 lbs.	1585 lbs.	1005 lbs.	610 lbs.
(3rd crop)	1520 lbs.	1298 lbs.	812 lbs.	404 lbs.
Distance between seeds	3"	3"	3"	3"
Distance between rows	24"	24"	24"	24"
Depth of planting	1½"	1½"	1½"	1½"
Growth of plant	good	good	poor	poor
			initial	initial

ORIENTAL USES OF SOYBEANS AS FOOD



The interplanting of sorghum with soybeans. Korea.



Different varieties of soybeans in the market place at Seoul, Korea. (August 1948).



Wooden buckets used for transporting night soil to the land. Korea.

With Attention to Fermented Products Notes on Oriental Farming Practices

V. KOREA

By
RAYMOND E. CULBERTSON¹
and **ALLAN K. SMITH**

Northern Regional Research Laboratory,
Peoria, Ill.
Photos by Dr. Smith

SOYBEANS HAVE BEEN grown in Korea for many centuries. One can speak in terms of centuries; Korea's calendar year is now 4281 in contrast to our 1949.

Reportedly, soybeans were brought to Korea from China 2,000 to 3,000 years ago in the customary exchange of gifts between the ruling houses. Furthermore, according to the records, the Pakja Dynasty with its capital at Puyo, Chung Chong Nam-do, compelled the people to harvest and store soybeans for both food and seed.

¹Former Adviser, Agricultural Production, U. S. Military Forces in Korea. Present Address: GHQ SCAAP, APO 500, c/o Postmaster, San Francisco, California.

²One of the laboratories of the Bureau of Agricultural and Industrial Chemistry, Agricultural Research Administration, U. S. Department of Agriculture. Report of a study made under the Research and Marketing Act of 1946.

Since the high density of population in Korea limits livestock production, it is only natural that soybeans should be grown and utilized in supplying much of the protein needed in the diet of the people.

At present Korea is divided into two zones separated by the 38N Parallel. In the north, with the area occupied by the Russian forces, no recent information on soybeans is available. South Korea is now a republic with the United States occupation forces present for security purposes and the Economic Commodity Administration to assist in rehabilitating the country.

Korea has the village system of farming. Farmers live in small villages, with their lands within walking distance of their homes. The village system, together with isolation caused by mountains and streams makes transportation and exchange of products difficult, and has contributed to the selection and development of many varieties of soybeans of considerable merit. These varieties for the most part are relatively pure and of many colors and sizes: green, red, brown, black, purple, yellow, cream, and gray, all of which may be found at the same time

in one market place in Seoul, the principal market in Korea.

Production figures for South Korea show that, over the years, 8 to 10 percent of the land is planted in soybeans and the yields range from 8 to 14 bushels per acre. These yields appear low but are explained by Korean farming practices. It is the custom to seed small grain in rows in the fall of the year with sufficient space between the rows to permit interplanting with soybeans in May or early June before the grain is harvested.

Prior to World War II, North Korea planted (1940-44 averages) slightly more than 905,000 acres of soybeans annually which yielded some 7,700,000 bushels. During the same 5-year period South Korea was planting 626,000 acres which yielded a little over 5 million bushels. The latest available figures (1947) for South Korea show a production of 4,430,000 bushels from 662,000 acres.

Breeding Work

During the period of Japanese control of Korea, much of the breeding work on soybeans was in North Korea. The Japanese built about 15 Agricultural experiment stations throughout the country. The present status of the activities north of 38 N. latitude is not known. As far as can be ascertained, no plant breeding work with soybeans is now being done in South Korea. However, variety testing and selection of good

TABLE 1.—THE CHIEF VARIETIES OF SOYBEANS IN KOREA AND DESCRIPTION DATA FOR EACH

Variety	Time of maturity	Color of flower	Length of stem	Color of grain	Weight of 1000 seeds	Yield per acre	Rank in test	Year approved
	Days		Inches		Grams	Bushels		
1. Chang Tan Paik	112	Purple	26	Light yellow or cream with yellow-brown hilum	253	32.1	3	1932
2. Chung Pak Paik	137	Purple	20	Green with light brown hilum	209	24.0	12	
3. Chung Pak Whang	129	Purple	29	Yellow with brown hilum	209.4	32.1	4	1924
4. Paik Chom Kong	128	White		Light yellow with white hilum	145	24.8	11	1924
5. Paik Pam Kong	122	Purple	15	Yellow-white with yellow-white hilum	245	25.9	9	1939
6. Elk San	108	Purple	17	Cream to yellow yellow-white hilum	272.2	26.8	7	
7. Chuk Kok	116	Purple	30	Yellow with dark brown hilum	206.8	25.8	10	
8. Kum Du	113	White	25	Golden with brown hilum	178	30.4	6	1921
9. Kyong Du	116	Purple		Light yellow with brown hilum	228	30.5	5	1921
10. Ham Am	109	Purple	13	Yellow with brown hilum	221.4	14.0	15	
11. Ul San	129	White	20	Yellow-green with brown hilum	180.4	22.4	13	
12. Sen Chun	150	Purple	31	Yellow-brown with light brown hilum	309	14.3	14	1930
13. Kum Kang Toi	162	White	30	Yellow to white with white hilum	426	37.7	1	1931
14. Kum Kang So	143	Purple	44	Yellow-white with same color hilum	244	36.8	2	
15. Chun An	128	Purple	14	Light-yellow with light brown hilum	231	26.3	8	

Note: The following is an explanation of the Korean names for the soybean varieties listed: 1. Chang Tan—for a town in Korea and Paik, meaning white; 2. Chung Pak—for same province as 2 and Whang, meaning yellow; 4. Paik Chom Kong—literally, meaning white little soybean; 5. Paik Pam Kong—literally, meaning white chestnut soybean; 6. Elk San—for a town; 7. Chuk Kok—meaning unknown; 8. Kum Du—literally, gold soybean, "Du" being the Chinese name for soybean; 9. Kyong Du—provincial name; 10. Ham Am—town name; 11. Ul San—town name; 12. Sen Chun—town name; 13. Kum Kang Toi—Kum Kang from diamond mountain and Toi meaning large; 14. Kum Kang So—diamond mountains, large (So) beans; 15. Chun An—provincial name.

strains is being carried out at several experiment stations at both the provincial and national level.

The leading varieties in South Korea have resulted from rigorous selection, mostly by farmers, over a long period.

Soybean Varieties

There are many varieties of soybeans in Korea but little attention was given to outstanding characteristics or the naming of varieties prior to the early 1920's when an improvement campaign was begun. In South Korea there are now 15 leading improved varieties. The areas where these varieties are grown with the acreage production data for 1947 are shown on the map accompanying this article. Brief descriptions of these varieties taken from the results of a 3-year test at the Sa Ri Won Agricultural Branch Station (1935-37) are shown in table 1.

The composition of improved varieties of Korean soybeans, on the basis of the size of the beans, is shown in table 2. These data were supplied by the Su Won Agricultural Experiment Station.

Climatic Relations

The climatic conditions in South Korea are somewhat similar to that part of the eastern seacoast of the United States which extends from Charleston, S. C., to Washington, D. C. An exception is a rainy season,

July to August, and a winter season that is somewhat drier. Northern Korea is much colder, simulating the climate of southern New England. Rainfall varies from 40 to 50 inches over most of the country.

The prevailing winds blow from the Asiatic continent in winter and from the Pacific Ocean in the summer, which results in combining continental and maritime climates.

Selected varieties of soybeans make satisfactory growth with well-filled pods throughout Korea proper and even on Cheju Do Island at 34 N. latitude.

Soils of Korea

The soils of Korea were formed in a temperate forest region and are

TABLE 2.—ANALYTICAL DATA FOR IMPROVED VARIETIES OF SOYBEANS ON THE BASIS OF THE SIZE OF THE BEAN

Type of bean	Number of samples	Total nitrogen	Protein (N x 6.25)	Fat
		Pct.	Pct.	Pct.
Large soybeans:				
Southeast Korea	3	6.73	42.18	20.67
Northeast Korea	3	6.88	43.17	20.55
Medium size soybeans:				
Southwest Korea	5	6.66	41.95	21.42
Central Korea	4	6.74	42.12	22.06
Northwest Korea	8	6.62	41.37	20.63
Southeast Korea	6	6.81	42.6	20.40
Northeast Korea	3	6.91	43.2	19.9
Small soybeans:				
South Korea	4	6.75	42.08	20.34
Central Korea	3	6.32	39.53	22.07
Northwest Korea	5	6.79	42.67	19.81
Northeast Korea	1	6.70	41.91	17.11

Note: Data supplied by the Su Won Agricultural Experiment Station. All calculations are on moisture-free basis.

derived from both igneous and sedimentary materials. Inland the soils are mainly of granitic origin, and the profile shows about the same composition where cuts are exposed. For the most part, the soils are somewhat acid and lack organic matter. Some of the best lands are those of alluvial nature along the rivers and ocean. Most of the paddy lands (rice is the principal crop) are underlaid with a hardpan which is excellent for holding water so essential for rice production.

Along the rivers and coast one finds sandy and gravelly loams; in the valley lowlands, clays and clay loams; and on the uplands, rather coarse sandy loams. When not tapped, the water drains off rapidly following rains. There are few springs or deep wells in Korea.

The system of land use does not include sod or pasture for resting the soil; hence, the soils are largely depleted of nitrogen. Two crops of grain each year, i.e., rice and barley or wheat, have been grown on the same land for years. The system of applying ashes from wood and other vegetable growth to the land maintains sufficient potash for ample plant growth on most of the soils.

To grow good crops the Koreans use as fertilizers, night soil; compost made from grass comings, leaves, and waste products; leaves from trees; some animal manures; and commercial fertilizers which are principally ammonium nitrate and ammonium sulphate. Some superphosphate is used, but in general the value of phosphorus in crop production is not sufficiently appreciated.

Soybean curd and vegetables. In the market place at Seoul, Korea. (August 1948).



SOYBEAN DIGEST

Topography

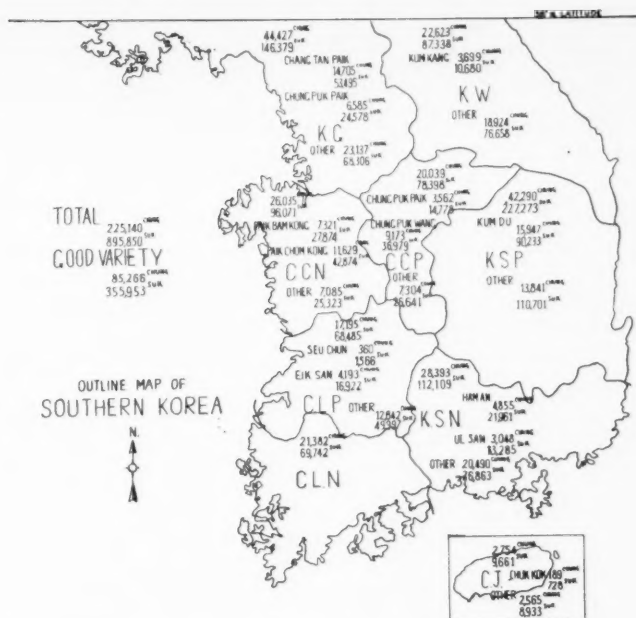
Korea is a mountainous peninsula extending south from Manchuria and Siberia a distance of 525 miles. Its width varies from 125 to 200 miles and its area is calculated to be 85,000 square miles.

The relief pattern is characterized by (1) a mass of mountains in the north (2) a long range of mountains extending from north to south along the east coast, and (3) a series of ranges extending southwesterly from the eastern mountains. Seven principal rivers flow to the west and the best lands are along these rivers, principally in the southwestern part of the country. Most of the farm lands lie south of 38° North Latitude, but even here, arable land represents only about 25 percent of the area. Cross-country travel is difficult and good all-weather roads are few. It was once the custom to take up the bridges during the rainy season so as to have them in the dry season. Otherwise they would wash out.

In general, the vegetative cover on the hill and mountain lands is sparse, a result of indiscriminately cutting the forests for timber and fuel, and literally combining of the grasses for compost as well as for fuel. Naturally erosion is very serious and an aerial view presents a series of bald spots and muddy streams covering the landscape.

Land Use

The pattern of land in Korea is very interesting. The average size of farm is 2.7 acres, and all land suitable for rice is planted to this crop during the summer months. The numerous small paddies are separated by low dikes or banks which serve to separate the land holdings and to trap the water necessary for growing rice.



Outline map of South Korea showing the principal varieties of soybeans grown, the section where each variety is found, acreage, and production. A chung or chungbo is 2.45 acres, and suk is 5 bushels. The yields appear very low but this may be due to the custom of interplanting soybeans with other crops. Map furnished by Korean Department of Agriculture, and courtesy of U. S. Agricultural Advisers in Korea.

Where the climate permits, which is in about two-thirds of the country, barley, to a major degree, and rye, wheat, etc., are used as a winter double crop on the rice land. On the uplands, which lack sufficient natural or irrigation water to grow rice, small grains are grown in the winter, followed by soybeans, sesame, sorghum, millet, peppers, puerilla, cotton, Chinese cabbage, radishes, and other crops required for family use, in the summer and fall months.

It is customary to plant a few rows or a bed of each crop (rice

excepted) placing the rows far enough apart to permit inter-planting of another crop before the first matures. Blocks of soybeans may be planted, but frequently the beans are used as border plantings on the dikes, around patches of sesame, puerilla, peppers, and other vegetables. Plantings of soybeans are found under many conditions, along railroad and road banks, on both new lands and those which have been under cultivation for centuries. In some sections scattered seedings of soybeans are made in millet, while in

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BROKERS TO THE SOYBEAN PROCESSOR

others scattered plantings of sorghum or row plantings with the plants several feet apart are made in the soybeans. Many orchard men use soybeans as a cover crop and plow the crop under for green manure. Soybeans are seldom employed as a cover crop, however, outside of the orchard.

Cultural Practices

Soil Preparation—The larger areas are plowed with an ox hitched to a very simple steel-pointed plow. Smaller lands are dug up with crude hoes or shovels, many of which are three-manned. This three-man shovel always creates a great deal of interest among foreigners. The soil is leveled with rakes, and large lumps are broken with mallets. Sometimes the land is "boarded down" but usually the seedbed is left loose. For interplanting in winter grain, a row must be made with a hoe, since the soil is rather firm from walking between the rows.

Method of Seeding—Seeding is done by hand and both hill and row planting are practiced. In hill planting the seeds are placed 12 inches apart, while in row planting the seeds are spaced singly 4 to 5 inches apart, with from 12 to 40 inches between rows. Methods differ, just as elsewhere, and vary according to the whims of the planters. Usually, after the farmer drops the seed he tramps it in with his heel.

Time and Rate of Seeding—Seeding time for soybeans ranges from early May to late in June, depending on the variety, climatic conditions and system of cropping. As shown under varieties, maturation periods range from 108 to 152 days, so this

must be considered with the seeding time, although the maturing time of the previous crop probably determines seeding time more than any other factor. The common rate of seeding is 15 pounds per tan ($\frac{1}{4}$ acre), the usual seeding unit.

Since soybeans have been grown for centuries, inoculation of the seed is not necessary. Examination of roots of plants throughout Korea showed plenty of nodules.

Fertilizer Used—In the past a 0-4-4 fertilizer was recommended for soybeans. However, at present commercial fertilizer use is usually limited to superphosphate, with the potash being derived from wood ashes. Animal manures, compost and night soils are applied when available but usually to the grain or vegetable crop preceding the soybeans.

Cultivation—Cultivation is done manually, with regular long-handled Korean hoes or small, curved scraping hoes which are usually wielded by women who "waddle" down the rows in groups as they weed and hoe. This weeding custom creates something akin to a social gathering and frequently two to a dozen or more women can be found in one field. For some reason, men are seldom found weeding soybeans. Their time is spent in the rice paddy. Most of the farm patches are too small for the efficient use of machinery even if it were available. It is a hand-proposition from start to finish.

Harvesting and Threshing—When beans are to be sold while still green, they are pulled from the ground, bunched, and taken to market. Mature beans are cut off at the ground with hand sickles, bunched and set

up to dry in the field or carried to the buildings and hung up to dry under the eaves.

Whenever needed, which is mostly during November, December and January, the beans are placed out on a level area, also used for threshing grains, and the seeds are flailed out. The leaves are collected for livestock feed, and the stems are used as fuel. Occasionally, the beans are threshed by the tramping of horses or oxen as the animals are driven in circles over the material, but this is not a common practice.

Marketing

It is estimated that 60 percent of the soybeans harvested are marketed and that 40 percent are consumed on the farm. Although soybeans are sold throughout the year, most of the beans are marketed during January, February and March, the season for making soya sauce, paste and cochinchang (kochuchang). Because of the constant market for curd and other products, making them is a steadier and less of a seasonal job.

Soybeans as Foodstuff

In direct human consumption, soybeans play an important part in the diet of the Korean people. To make the beans, which are all classed as edible, as palatable as possible, many methods of preparation have been devised. In addition to whole cooked beans, products include soya sauce, bean curd, bean paste, bean milk, bean flour, bean sprouts, stewed beans, bean cake and bean cheese.

Soya Sauce

Soya sauce is found on the tables

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DICKINSON NEWS

Farm Laboratory Division

PRE-TESTING NOD-O-GEN INOCULATOR PREVENTS CROP FAILURE

What can be done to improve crops? This problem is uppermost in the minds of most farmers. NOD-O-GEN Pre-Tested Inoculator is our answer. A product that has tremendous crop improving value for farmers and . . . increased customer-drawing power for dealers.

Factual Story On SELF-STYLED "LEADER"

Below you see an actual photograph of a field of blue lupine, recently taken in the Southeast. The lush vigorous growth in the background is the result of NOD-O-GEN inoculation. The thin, scraggly growth in the foreground, most likely a complete failure, is the result of inoculation with a competitive inoculant . . . a self-styled "leader" in the field. This is actually a farmer's field and one of many where similar conditions were apparent. It is not a "trial" plot. Everything else was equal — seed, soil, etc.

Pre-Testing Costs Thousands of Dollars Annually

Dickinson's Pre-Testing Program which costs thousands of dollars annually, assures Dickinson dealers and their farmer customers that NOD-O-GEN is the inoculant that will insure abundant growth and excellent crops.

Under the Pre-Testing program every lot of inoculator, after it is manufactured and ready for use, is required to measure up to the most rigid standards of nodule formation and nitrogen fixation. Only those lots which pass these strict tests are shipped to the trade.

Ten Batches of Lupine Discarded

We know from experience that lupine inoculant requires special attention. Two seasons ago our Pre-Testing Program resulted in the discarding of ten batches of lupine that did not meet our rigid standards. Results in the field may have been favorable, however, we did not want to experiment at the expense of our dealers and their customers.



Here is an actual photograph of a field of blue lupine. The abundant growth in the background was inoculated with NOD-O-GEN. The sparse growth in the foreground was inoculated with a competitive inoculant. Farmers' names and locations available on request.

Be On The "SAFE SIDE"

Mr. Dealer to protect yourself and your farmer customers, stock and sell NOD-O-GEN the Pre-Tested Inoculator. Avail yourself of the protection in quality that NOD-O-GEN offers at no additional cost to you. You may order from your jobber or direct. We will gladly send you the name of your nearest NOD-O-GEN distributor. NOD-O-GEN is packed in practical size packages for all common legumes. Special cultures are available for little known but promising legumes.

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NOD-O-GEN



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of all Koreans, where it is used quite generally on rice, sukiaki, fish, chicken and other meats and for the flavor it adds to soup. It is a very popular appetizer. Most families make soya sauce and are allocated 2.7 kilograms of salt per person annually for this purpose. Yearly consumption is about 6 liters per person. In addition to homemade soya sauce, a supply is also available from many small factories making it. There are more than 10 plants in Seoul, the capital city. Making soya sauce in the home starts about January or February. It is the custom at this time to take a batch of beans and boil them in water until soft, following which they are mashed and formed into a ball, placed in a rice-straw bag and hung up in a heated room to ferment for a 3-month period. Following fermentation, the ball is cut open, broken into pieces and allowed to dry in the sun. When dry, water and salt are added, inoculant (yeast) introduced and the mixture allowed to stand in an earthen crock 2 to 3 months. The liquid is then poured off, boiled about 2 hours and filtered, following which it is considered to be sauce. The sediment remaining in the crock is known as paste. This is used primarily for making soup. In both home and commercial production of soya sauce parched and browned wheat or barley is frequently used in conjunction with the soybeans.

Green Pods on the Bush

It is common practice to market early beans on the bush. The plants are pulled, the dirt shaken from the roots and the leaves removed. The branches are tied with a string (usually hemp) and the plants are taken to market where they are sold by the bunch. The housewife prepares them for eating by picking off the pods and boiling, and the plant stem is used for fuel.

Bean Sprouts

Bean sprouts are much in demand, especially during the winter months. They are used in combination with meat, Chinese cabbage, spinach, turnips, soups and various other cooked dishes. Sprouts are nourishing and supply much-needed vitamins to the Korean's usual polished rice diet. In some instances the beans are left on the sprouts, in others they are removed. The beans are sprouted in central places and usually peddled in two-wheeled, man-drawn carts. Sprouting requires about a week. They are sold on a weight basis.

Parched Beans

For parching, soybeans are simply placed in a pan over a fire and heated slowly until the skin breaks and part of the beans are slightly blackened. They are eaten like peanuts or mixed with other foods. Most varieties are quite palatable and well liked for parching.

Curd and Milk

Soybean milk is consumed in Korea but not so extensively as in China. The milk is made in a manner similar to the Chinese method which was described in an earlier report.

A large percentage of the soybeans grown in Korea are consumed as soybean curd. In addition to the huge quantities made at home, curd is also made in literally hundreds of small factories. In Seoul alone there are more than a hundred. Small units, which on the average employ five men, can work up about 10 bushels of soybeans daily. The beans are soaked in water for several hours, then crushed into a watery paste, the mash removed by filtering, and the resulting milk boiled for about 30 minutes. The curd is precipitated by adding rennet, then collected by filtering. It is then placed in wooden frames and pressed or allowed to set, and then cut into

squares which resemble old-fashioned cakes of soap. The general practice is to operate the curd factories, which are usually of one vat capacity, at night and to distribute the product at the various markets in the morning. At present these cakes sell for 15 won (about 5 cents, U. S. money) each. The curd, after boiling, may be used "as is," or in soups or with fish or other dishes like Sukkiaki, which is a conglomerate of many ingredients such as meat, bean sprouts, onions and cabbage.

Kochuchang

Practically every Korean family makes kochuchang. Boiled beans are mashed and hung up in sacks to cure well for 2 or 3 months. This material is then broken up, dried in the sun, and ground to a fine powder, usually in an old type hand-operated stone mill. Red peppers are ground fine, the lot is mixed and salt and water added, then it is allowed to stand in crocks 2 to 3 months. To prepare kochuchang for the table, it is taken from the crock and boiled with the addition of ground meat and sugar, if the latter is available.

Other Uses

Green Manure—Soybeans are seldom used as a green manure crop in Korea. A few instances were observed in orchards and on the Island of Cheju Do on some hill land. The beans are grown quite generally in orchards but are usually harvested for food rather than turned under for manure. The demand for food is too great to permit extensive use. In Korea, hairy and Chinese vetch are the green manure crops rather than soybeans.

Soybeans as Livestock Feed—Soybeans form the principal source of protein in livestock feeding. They are fed liberally to working cattle, milk cows, horses, and rabbits. To a lesser degree they are fed to hogs;

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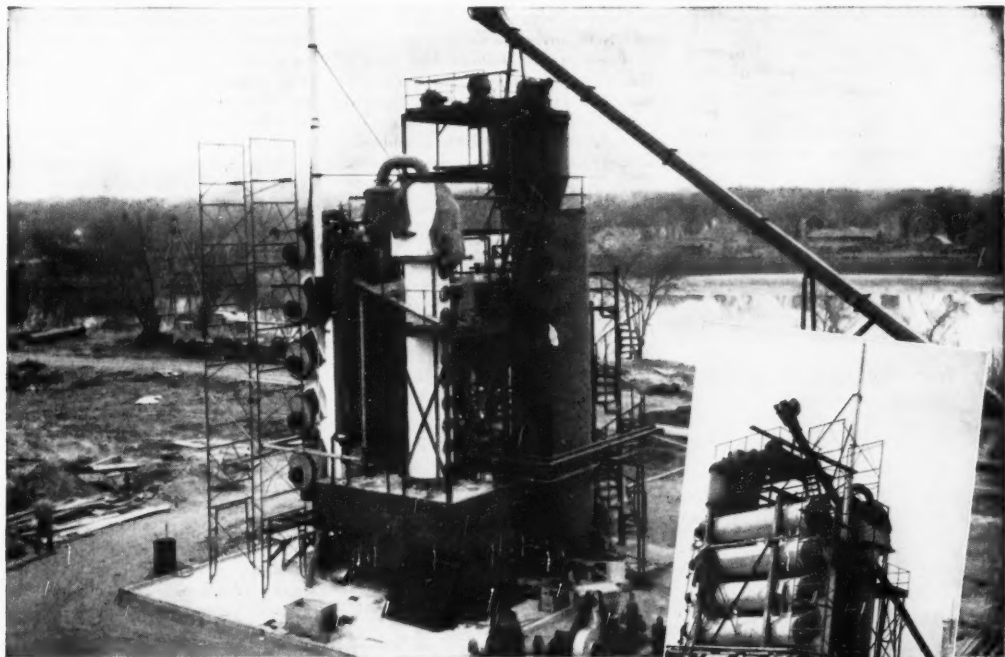
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There are many good reasons for the increasing preference for the Anderson type of solvent extraction unit. Primarily, these units save the owner money three ways.

First, a lower investment is required, since no costly building must be erected . . . sometimes where severe weather conditions are

encountered an inexpensive enclosure is used. Second, less labor is required as one man runs the plant by remote control. Third, a greater degree of safety results in lower insurance rates.

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SOLVENT EXTRACTION
EQUIPMENT**

usually for a few days following farrowing.

The Koreans produce a few cattle for beef, and the term "work cattle" is employed. Work cattle supply the power other than man power of the country, and are used for work on the farm as well as for pack and dray animals. The cattle are worked hard and require plenty of feed although seldom getting a balanced ration. During the heavy work season it is common practice to feed working cattle 1 to 2 quarts of soybeans daily. The cattle feed is prepared by mixing the beans with rice

straw soybean or other hay, and rice bran, and cooking the mixture in water.

For horses at work, about 1 quart of soybeans daily are soaked in water and fed along with rice bran, rice straw (cut up) and oats, if available. Some soybean hay may be fed also.

Dairy cows are usually fed 1 to 2 quarts of soybeans daily in addition to considerable soybean hay during the lactation period. The beans are soaked in water before feeding. Prior to the war, soybean cake was brought in from Manchuria and was a part of most livestock rations. With Manchuria now under Russian domination, soybean cake is no longer available. The extraction of soybean oil has never been of commercial importance in South Korea.

(The end.)

— s b d —

TRICHLORETHYLENE PLANT BY DETREX

To help meet the heavy industrial demand for trichlorethylene as a metal cleaning and oil-extraction solvent, a new manufacturing plant is going to be built in Ashtabula, Ohio, by Hooker-Detrex Inc., Niagara Falls, N. Y., at a cost in excess of 11½ million dollars.

It is planned to have the plant in operation early in 1950. This location is central with respect to the

eastern market for trichlorethylene, and the necessary raw materials, calcium carbide and chlorine, are readily available. Chlorine will be supplied from the new sodium plant now under construction by National Distillers Chemical Corp.

In addition to its major use for the degreasing of metals, trichlorethylene, which is non-flammable is employed for the extraction of fats and oils from vegetable and animal products. It is also used in the manufacture of certain chemicals and for general solvent purposes.

Detrex is the largest marketer of trichlorethylene solvent in the world. Their general offices and main plant are located at 14331 Woodrow Wilson, Detroit, Mich.

NEW HAMPSHIRE REPEALS

Repeal of New Hampshire's anti-margarine law banning yellow color was assured May 25 when the Senate, without a dissenting vote, approved a bill previously passed by the House. It was expected that the bill would be signed by the Governor May 31.

New Hampshire thus becomes the third state this year and the eighth in two years to repeal its state anti-margarine laws. Michigan and Tennessee acted earlier this year, joining Maine, Maryland, Massachusetts, Missouri and New Jersey—the five states which abolished prohibitions against yellow margarine in 1943.

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CROP IS OFF TO GOOD START

Most Soybean Digest crop reporters continue to forecast that 1949 soybean acreage will be cut under 1948. The big factor in any shift away from beans is the low prices prevailing in late winter and the relationship to other crop prices, and the feeling that governmental supports favor corn and cotton.

Also, there is a desire on the part of many farmers to get more land into sod.

Planting weather to date has been very favorable in most localities. If it continues there apparently will not be a large emergency planting of soybeans as a replacement for other crops. Planting to date of soybeans has been at the normal time or earlier in most sections.

Reports of Soybean Digest correspondents follow:

ARKANSAS

L. M. Humphrey, R. L. Dortch Seed Farms, Scott, for Little Rock area (May 26): Planting date normal. 95% planted June 1. A protracted dry and windy spell from May 1 to 23 damaged some stands and caused replanting. 40% de-

crease in acreage from 1948. Most of this planted to cotton. Continued high price of cotton and slump in soybean prices chief factors. Some increase in S-100, Dorthsoy 2 and 31.

Jake Hartz, Jr., Jacob Hartz Seed Co., Stuttgart, Ark., for southeast (May 23): Planting date 10 days later than normal in cotton section; rice section normal. 30% of crop planted June 1. Weather dry. Need moisture badly. Acreage 10% less than 1948. Big cotton and rice crops. Soybean price too low. Varieties mostly Ralston and Ogden 302, and Red Tanner in rice section.

FLORIDA

A. N. Stephens, county agent, Pensacola, for Escambia County (May 26): Planting date normal. 85% planted June 1. Weather very good until 2 weeks ago. Dry since. Some plantings delayed. Acreage about same as 1948. Increased acreage will not be realized due to increased price for fertilizer and 1949 outlook for soybean prices.

ILLINOIS

Walter McLaughlin, farm service

department. Citizens National Bank of Decatur for Decatur (May 23): Planting date about normal. 50% will be planted June 1 if weather stays fair. Excellent rain made conditions ideal for planting. Acreage 90% of 1948, due to prices and more clover and oats. Several producers planting Hawkeye for first time.

Russell S. Davis, Clayton, for west central (May 25): Planting earlier than normal. Practically all plowing for beans done by May 25 and quite a few fields seeded even before corn. Percentage of rowed fields still increases. Frequent, light showers are starting the weeds in seedbeds already prepared. This will give one more chance to cultivate before drilling. Plenty of moisture for germination. Acreage slightly less than 1948, I think. More oats seeded than usual in effort to get more land back to clover. Hawkeye is all the rage, but Lincoln still dominant. Did Hawkeyes get started at too high price? They are begging buyers at cut prices in spots. Looks like most of crop will be planted by June 1.

E. E. Eversole, Hindsboro, for Douglas County (May 25): Covering Hindsboro to Paris, in Edgar Coun-



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ty, to Marshall to Martinsville to Greenup in Cumberland County to Charleston and Mattoon in Coles County, then north into Douglas County, about 140 miles in all. Corn and soybeans 85% planted May 23 and coming up very well. Almost too much moisture yet most fields free from weeds. Looks like a wonderful start to grow big crop. Soybean acreage certainly 15-20% less than 1948. More oats and clover and larger corn acreage. Some farmers planting every acre in corn due to price support for 1949 crop. Local elevators offering \$1.88 for new crop beans.

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Robert W. Weitzer, Valley Farms Co., Wrights, for west central (May 25): Planting date about normal. Some planted 10 days to 2 weeks ago and none since because of rains. With clear weather all ought to be planted in 2 weeks. Early planted beans are up because of good recent rainfall but will be very weedy unless can be cultivated soon. Acreage 90% of 1948. Increased corn and wheat caused acreage decline but may get up to normal if poor stands of oats and lespedeza are turned under and planted to beans.

J. E. Johnson, Champaign, for Champaign and adjoining counties (May 28): 65% planted June 1. Heavy rainfall starting 10th of May continued for period of 2 weeks, ranging from 3 to 7 inches. Drowned out areas of crops negligible. Do not anticipate any reseeding of fields with beans. Acreage 10 to 15% lower than 1948 general in this, one of the largest soybean producing areas. Lower yields a factor, but not as much as the price situation. Was tremendous effort to sell growers on Hawkeye. Illinois Hawkeye growers priced themselves out of the market.

INDIANA

J. B. Edmondson, Danville, for south central (May 24): Planting started 2 to 3 weeks earlier than past few years. Bulk of crop yet to be planted, however. Rains have stopped all planting at present. With fair weather on out 90% will be planted June 1. Moisture conditions ideal now after troublesome dry spell. Beans will go in amazingly fast when weather settles. Estimate about 8% drop in acreage. High wheat and oats acreages have squeezed out soybeans somewhat. All available Hawkeye seed has been sold for seeding.

IOWA

Fred W. Hawthorn, Castana, for western (May 25): Planting date normal. 98% planted June 1. Dry in early May. Plenty of moisture past week. Acreage 30% below 1948. Relative low prices for beans as compared to corn a factor. More Hawkeyes than last year.

O. N. LaFollette, Iowa Department of Agriculture, Des Moines: Planting date earlier than normal. Nearly all planted June 1. Weather conditions good. Total acreage for beans and hay at least equal to 1948 but harvest for beans estimated lower, as crop needed for legume hay.

Leslie M. Carl, federal statistician, Des Moines (May 23): 40% crop planted by May 21. Weather condi-

tions good. Early intentions were for 9% reduction for state.

Otto G. Brandau, Rudd, for northeast (May 23): Planting earlier than normal. 95% planted by June 1. Weather conditions favorable. Acreage 20% less than 1948. Price return not comparable to corn. More Hawkeyes than last year.

LOUISIANA

W. M. Scott, Scott Plantations, Tallulah, La., for northeast (May 26): Planting 10 days-2 weeks later than normal. 90% planted June 1. Weather worst we have ever experienced. Too wet for farm work up to March 10. No rain since April 25. Ground too dry for germination of seed. 25% acreage decrease under 1948, due to weather conditions and uncertainty of price of beans.

MICHIGAN

S. C. Hildebrand, farm crops department, Michigan State College, East Lansing (May 26): Planting date about normal. Possibly 5% planted June 1. Weather slightly cool. Has been quite dry but at present southeastern Michigan is too wet. Other areas have good moisture conditions for planting. Acreage probably about 10% below 1948. Decided change to Hawkeye with Lincolns. Earlyanas and Richlands decreasing.

MINNESOTA

Howard E. Grow, Farmer Seed & Nursery Co., Faribault, for south central (May 27): Planting about normal time for area. 70% of crop planted. Weather cool and normal for moisture. Good rain would be beneficial. Acreage about 80% of 1948 for this area. Price of beans affecting acreage.

R. E. Hodgson, Waseca, for southwest (May 23): Planting dates from a week early to normal. 95% planted June 1. Cold front past week has made germination slow. Haven't seen any beans up yet. Favorable weather for corn planting may cut acreage by 10%. Corn borer scare has subsided. A few growers still banking on late fall and using late varieties.

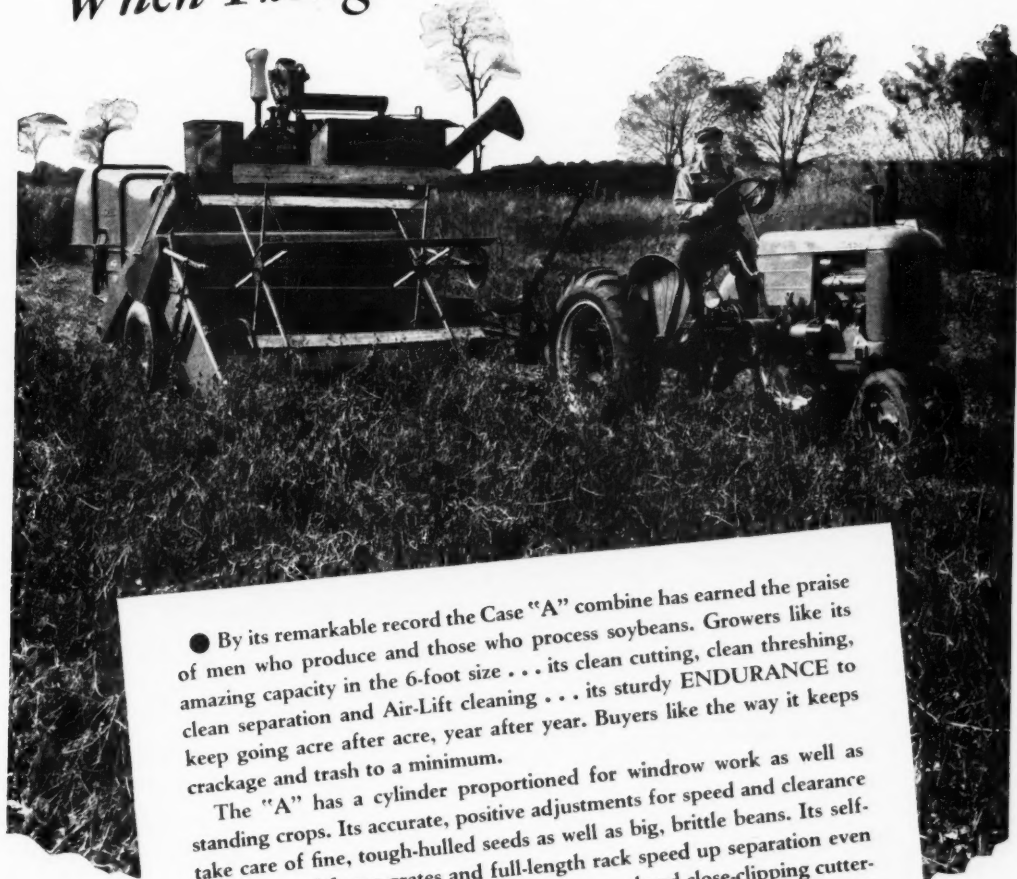
John W. Evans, Montevideo, for southwest central (May 25): Planting date ahead of normal. 90% planted June 1. Surface conditions dry but subsoil has moisture. 25% acreage shrink from 1948. Price low and too much variation. Ottawa Mandarin principal variety.

MISSOURI

E. M. Poirot, Golden City for southwest (May 24): Planting date will be delayed due to wet weather. No chance of seeding for at least a

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week. 25% planted June 1. Acreage about same as 1943.

John E. Brown, Cypress Land Farms Co., Jayuya, for New Madrid County (May 25): Planting date normal. 95% planted June 1 except for crop to follow small grain. Weather warm with cool nights and plenty of moisture. Acreage down 10% or more from 1943. Some cotton damaged by cutworms and army worms to be replanted in soybeans. Storm damaged crop to be partly replanted in soybeans. Almost entire acreage to be in Ogden and S-100.

Heartsill Banks, O. H. Acom Farms, Inc., Wardell, Mo. for south east (May 23): Planting date 5-10 days early. 75%-80% crop planted June 1. $\frac{3}{4}$ -inch rain May 24. If it continues to rain some acres now in cotton (and grass) may wind up in soybeans. Black land has poor stand where rain was scarce earlier. Sandier types of soil have excellent stands. 10% less acreage than 1943. If adverse weather makes cotton stands bad, farmers may plow up some cotton and plant to beans. Varieties about same as 1943—Ogden, S-100 and Ralsoy.

A. F. Stephens, general agricultural agent, Gulf, Mobile & Ohio railroad, St. Louis, for northeast Missouri and central Illinois (May 27): 75% planted June 1. Weather favorable. Slightly cooler than normal some areas. Acreage northeast Missouri 105% of 1943, central Illinois 90%.

NEBRASKA

Donald G. Hanway, assistant in agronomy, University of Nebraska, Lincoln, for eastern (May 25): Planting date about normal. 80%

or more planted June 1 depending on weather. Recent heavy rains have resulted in excellent soil moisture conditions, but have delayed corn planting and seedbed preparation slightly. Acreage about same up to 5% increase over 1943 in counties where wheat winterkilled. Probably an increase of Hawkeyes.

NORTH DAKOTA

C. J. Heltemes, agricultural statistician, Fargo, N. D. for eastern (May 23): Planting date about normal. Conditions have been favorable so far this year in eastern part where soybeans are grown.

WISCONSIN

John P. Dries, Saukville, for southeastern (May 26): Planting date normal. 50% planted June 1. Weather very favorable. Acreage 50% less than 1943, it appears. More favorable prices on other crops.

OHIO

G. G. McIlroy, Irwin, for west central (May 23): Planting week earlier than normal. 90% planted June 1. Weather favorable now but week ago it appeared that we might have a lot of poor stands of both corn and soybeans due to lack of moisture. Have had $2\frac{1}{4}$ inches last 6 days. Acreage 10% less than 1943. Necessity for replanting corn acreage might cause shift to more beans. 10% more Hawkeyes.

D. G. Wing, Mechanicsburg, for west central (May 26): Many beans are planted and up where ground was in shape. 35-50% planted June 1. Rain past week stopped operations. Early May was dry and warm but started raining May 19 and all planting was stopped. 10-15% less beans are being planted than in 1943.

due to good corn planting conditions early in May. Also low price has changed many smaller farmers over to more corn and oats for feed. Larger farms will have about normal acreage of beans.

TENNESSEE AND KENTUCKY

Peter Fredrickson, manager West Tennessee Soya Mill, Inc., Tiptonville, for west Tennessee and west Kentucky (May 23): Planting 2 weeks earlier than normal. 96% planted June 1. Weather good. Acreage 15% less than 1943.

ONTARIO

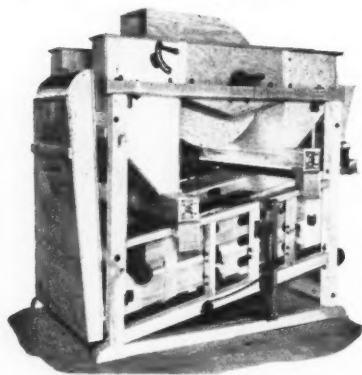
R. H. Peck, River Canard, for southwestern (May 25): Wet weather has delayed planting but good weather soon will make it still near normal. 25% planted June 1. Weather fairly good for soil preparation with some becoming quite dry, then heavy rains during last 2 weeks of May delayed work and will make weed control difficult in early plantings. Acreage 120% of 1943 due to lower corn price and cuts in acreage of some canning crops. Further delay in corn planting may further increase bean acreage. More Harman variety and a few Hawkeyes planted.

— s b d —

WORLD PRODUCTION

World soybean production reached an all-time high of approximately 593 million bushels in 1943, according to a revised estimate of the USDA Office of Foreign Agricultural Relations. The 1947 output is now placed at 533 million bushels. Canada and the United States harvested record crops and China, now second in world soybean production, had the largest crop over 10 years.

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Chemical defoliation of cotton is practical, and essential for the most efficient use of mechanical harvesters. It also has promise as a means of speeding up the harvest of soybeans.

Until recently, calcium cyanamide was the only defoliant available commercially. It will give excellent results if applied as a dust at a time when sufficient moisture is present on the leaves.

A liquid defoliant, ammonium thiocyanate is now available. It has been demonstrated to be effective as a defoliant and to act independently of free moisture and atmospheric humidity.

Extensive tests are under way with this material as a defoliant for soybeans and other crops. Defoliation will be tried on the fields of at least one large soybean producer this fall, in addition to some tests at state universities.

IMPROVED METHODS IN DEFOLIATION OF COTTON. By H. G. Guy, research department, Koppers Co., Inc., Pittsburgh 19, Pa. Talk before the South Carolina Chemurgic Conference, Columbia, S. C.

Prospects for 1949

From the standpoint of total cropland and the possibilities of more balanced farming, there is still room for a larger acreage of soybeans in some sections of the South and on level lands in the outer part of the Cornbelt, says Edwin G. Strand of the Bureau of Agricultural Economics.

It appears that soybeans should

again be a relatively profitable crop in 1949, according to Strand. Requirements of fats and oils for domestic consumption continue large. European countries show a strong preference for raw materials containing high-protein meal as well as oil which should help keep foreign demand strong. In addition, Manchurian soybeans are not likely to reappear on world markets in important volume during the year.

THE PLACE OF SOYBEANS IN THE FARM PLAN. By Edwin G. Strand. The Agricultural Situation, April 1949. Bureau of Agricultural Economics, U. S. Department of Agriculture, Washington 25, D. C.

Meal and Roughage

An experiment has been carried on at Ohio Agricultural Experiment Station to demonstrate the influence of soybean oil meal on roughage digestion in cattle.

Four fattening cattle rations were used, one with and one without corn cobs at an 8-percent-protein level and one with and one without corn cobs at a 15-percent-protein level. The rations were fed to 700-pound Hereford steers.

THE INFLUENCE OF SOYBEAN OIL MEAL UPON ROUGHAGE DIGESTION IN CATTLE. By Wise Burroughs and Paul Gerlaugh, Ohio Agricultural Experiment Station. Journal of Animal Science, Feb. 1949.

Plant Protein Ration

The nutritional deficiencies of a plant-protein ration composed of corn and soybean meal or corn, soybean oil meal and wheat middlings seem to be in the vitamins of the B2-complex rather than in the amino acids of the proteins. Three series of tests are reported on the nature of the vitamin deficiencies of the plant-protein-basal-ration for weanling spring pigs fed in dry-lot.

The addition of thiamin, riboflavin, pyridoxine, niacin, pantothenic acid and choline significantly improved survival, growth rate, red blood corpuscle counts, and hemoglobin values, but the growth rates were not as high as they should be. The addition of 1.5 percent AB liver extract to the basal ration plus the six B-vitamins significantly increased the daily gains.

It was demonstrated that the nutrient or nutrients in the AB liver extract responsible for the "kick" were not pteroylglutamic acid, pyracin, biotin, inositol, paraaminobenzoic acid, alpha tocopherol or vitamin K.

There is an unidentified growth factor in AB liver extract. This may be similar to the unidentified factor in commercial "vitamin free" casein and "nutrient X".

CRYSTALLINE OR CRUDE CONCENTRATES OF B-VITAMINS SUPPLEMENT A CORN-SOYBEAN MEAL RATION FOR WEANLING PIGS IN DRYLOT. By J. L. Krider, D. E. Becker, R. F. Van Poucke and M. F. James, University of Illinois. Journal of Animal Science, Nov. 1948.

Key to Production

Feeding is a key factor in the outstanding hog production record of Charles and Roland Brandt, Amenia, N. Dak.

They averaged 8½ pigs weaned per brood sow last year in their herd of 30 sows—and in 3 years of pork

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producing have averaged 8.7 pigs marketed per sow. They crossbreed, using Duroc, Poland China and Chester White boars in alternate years.

The Brandts practice a system of self-feeding, including ground alfalfa as soon as the pigs are taken off pasture. A mixture is made up of one-third by weight of choice alfalfa, plus oats and corn, and a 7-percent protein supplement. The Brandts make up their own protein supplement of one-third soybean oil meal, one-third meat scrap and one-third prepared supplement.

Addition of an animal protein supplement is essential to success with hogs, the Brandts say. They found their hogs were not making the best use of their protein supplement supplied in the self-feeders until the animal protein was added.

The weekly ration for 30 brood sows is made up in large lots. It includes 1,000 pounds of ground oats, 1,000 pounds of ground corn and 1,000 pounds of ground alfalfa. Two hundred and fifty pounds of protein supplement is added to this, mostly half tankage and half soybean oil meal.

By mixing a week's supply at one time and putting it into the feeders, the Brandts save themselves a lot of work. Each sow gets about 6 pounds a day of this balanced ration.

Including alfalfa in the ration does away with the problem of the sows getting too fat, according to the Brandts' experience.

GOOD HOG MANAGEMENT. The Farmer, St. Paul, Minn., Mar. 19.

Genetic Studies

Abstract of a thesis, *Genetic Studies on Soybeans*, by Hou-Lee Liu, submitted in partial fulfillment of the requirements for the degree of doctor of philosophy in agronomy, has been published by the University of Illinois at Urbana.

The author carried on his research work under Dr. C. M. Woodworth at the University of Illinois. Subjects covered by the publication are inheritance of plant and seed characters and analysis of linkage.

The author, a former assistant in the department of agronomy in the National Central University, China, came to this country on a fellowship in 1945, and completed his work on a master of science degree at the University of Illinois in 1946.

GENETIC STUDIES ON SOY-

BEANS. By Hou-Lee Liu. Urbana, Ill.

Miscellaneous

PROFITABLE SOYBEAN YIELDS. By E. E. Collins, W. L. Nelson and E. E. Hartwig. Revised Extension Circular No. 295. North Carolina Agricultural Extension Service, State College Station, Raleigh, N. C.

Outlines the steps to take for profitable soybean yields in North Carolina.

INFLUENCE OF PLANTING DATE ON YIELD AND OTHER CHARACTERISTICS OF SOYBEANS GROWING IN SOUTHEAST MISSOURI. By C. V. Feaster. Missouri Agricultural Experiment Station, Columbia, Mo. *Agronomy Journal*, Feb. 1949. American Society of Agronomy, 1910 Monroe St., Madison 5, Wis.

STUDIES OF TWO VIRUSES CAUSING MOSAIC DISEASES OF SOYBEAN. By Robert A. Conover. University of Illinois. *Phytopathology*, Sept. 1948.

A study of two viruses causing mosaic diseases of soybeans, *Soja virus 1* and *Phaseolus virus 2*.

OIL CHEMISTS ELECT

V. C. Mehlenbacher, Swift & Co., Chicago, was elected president of the American Oil Chemists' Society at the 40th annual meeting of the Society in New Orleans May 10-12, it was announced by the Chicago office.

Other officers elected: vice president, J. R. Mays, Barrow-Agee Laboratories, Inc., Memphis, Tenn.; members at large, A. E. Bailey, Girdler Corp., Louisville, Ky., T. H. Hopper, Southern Regional Research Laboratory, New Orleans, and L. B. Parsons, Lever Bros. Co., Cambridge, Mass.; secretary, H. L. Roschen, Swift & Co., Chicago; and treasurer, J. J. Vollerton, retired from Armour & Co., Chicago.

Past presidents who will serve on the governing board with the officers are C. P. Long, Procter and Gamble, Cincinnati; R. T. Milner, Northern Regional Research Laboratory, Peoria; S. O. Sorensen, Archer-Daniels-Midland Co., Minneapolis; and R. R. King, Mrs. Tucker's Foods Inc., Sherman, Texas.

The 1950 meetings of the Society will be held in Atlanta during the first week in May and in San Francisco in early fall.

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GRITS and FLAKES...

FROM THE WORLD OF SOY

Dr. C. H. Weiss, superintendent of the chemical pulp division, Buckeye Cotton Oil Co., Memphis was one of the panel members at a recent lecture held at Southwestern College on "Chemistry and the Standard of Living."

T. S. Carswell, New York City, has been named vice president in charge of research and development by the board of directors of Commercial Solvents Corp., New York City. He was formerly with Monsanto Chemical Co.

Harry F. Lester has been named sales manager of meal products at Swift & Co.'s soybean mill in Des Moines. He will supervise all oil meal sales and traffic at the mill. E. C. McGee, general manager, has announced.

Buckeye Cotton Oil Co., Memphis, is planning to build a 1600-square foot addition to its brick office building to centralize various offices now in different parts of the plant.

Hy-R-Speed, Inc., 1127F Riverside Drive, Los Angeles 31, Calif., has recently perfected a grinding mill which processors have found exceptionally effective for disintegrating, emulsifying, mixing, and homogenizing soybeans.

Prater Pulverizer Co., Chicago, Ill., is furnishing a complete sales kit free to all users of "Blue Streak" grinding and mixing equipment. The kit includes all elements of a local advertising, publicity and merchandising program.

B. F. Moorman, manager of General Mills Equipment Co., Kansas City, and R. L. Jones, sales manager, have recently become owners of the controlling stock in that company. Moorman was elected president and treasurer by the stockholders and Jones was elected vice president.

"The Virginia Story," published in the May issue of Manufacturers Record, indicates that soybeans are grown in 35 counties in Virginia.

Swift & Co. has announced that a soybean experimental plot on the oil mill property at Frankfort, Ind., will be planted and maintained by Purdue University this season. Arden Russell, Clinton County agricultural agent, will be in charge of experiments covering fertilizers, seeding methods, and delayed planting.

Michael J. Perry, district manager of Link-Belt Co., Inc., Moline, Ill., since 1946 has been appointed sales manager of the southeastern division at Atlanta. Andrew K. Kolar, district sales engineer at Moline, Ill. since 1947, has been appointed district manager in full charge of that office.

Chase Bag Co., Philadelphia, at a dinner for employees recently, presented diamond service pins to Ruth and Cecilia Perelman who were honored for long and faithful service since they started with Chase on the same day 25 years ago.

BLAW-KNOX PROMOTES



ARNE OLSON

Chemical plants division of Blaw-Knox Co., Pittsburgh, Pa., has announced the appointments of Arne Olson as chief process engineer, and R. H. Hazlett as manager of the oil and gas department.

Mr. Olson's promotion transfers him from one of the company's manufacturing plants, where he has been chief engineer of process equipment. He has been with Blaw-Knox since 1930 and has been closely associated with the development of a rapidly expanding line of Blaw-Knox chemical and process equipment and has, in addition, won distinction as a specialist on synthetic resins.

The promotion of Mr. Hazlett en-

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The Moultrie Grain Association of Lovington, Ill., has taken over the operation of the elevators of the McBee Grain Co. at Lovington and Ulrich which it purchased recently. The elevators will be operated with the two already owned at Cadwell and Williamsburg.

Dr. Max H. Thornton has been appointed chairman of the chemical research division at Midwest Research Institute, Kansas City, Mo. He is widely known for his work in fats, oil and glucosides, and holds patents on several large-scale production methods.

Appointment of Joe Capps as sales representative for the chemical division of General Mills, Inc., to cover the protective coating industry in Wisconsin was announced by Sewall D. Andrews, Jr., vice president of the division.

Kansas Soya Products Co., Inc., Emporia, Kan., held open house at its new processing plant recently. About 125 persons were conducted through the plant and given detailed descriptions of the machinery and work done.

The Phillip E. Calo Co., in Chicago has been appointed sales representative for the chemical division of General Mills, Inc., to handle vegetable, animal, and marine fats and oils as well as all organic chemical derivatives for the protective coating and allied fields.

D. W. McMillen, Sr., chairman of the board of Central Soya Co., Inc., and McMillen Feed Mills, was named "Man of the Year" by Fort Wayne Council 212 of the United Commercial Travelers. McMillen, who received a plaque symbolizing his selection, was honored because of his many civic activities in Fort Wayne over a period of years.

J. B. Sedberry, Inc., Franklin Tenn., announces its Junior mill to the grain processing trade in a new bulletin, No. 149.

The Glidden Co. has purchased an additional 50,000 square feet of property adjacent to its large feed mill division in Indianapolis. The present property will be used to improve the railroad switching facilities for the division.

A recent explosion of solvent vapors followed by fire at Cargill, Inc., soybean solvent extraction plant at Savage, Minn., resulted in serious injury to Al Ware, an employee. Damage to the plant was not extensive. The solvent vapors were ignited by a sparking switch in the switch room.

trusts him with two responsibilities, for he is also serving as manager of gas equipment at one of the company's manufacturing plants. A graduate of the University of Pittsburgh (1924), he joined the Blaw-Knox engineering staff in 1933.



W. J. CRUTCHER

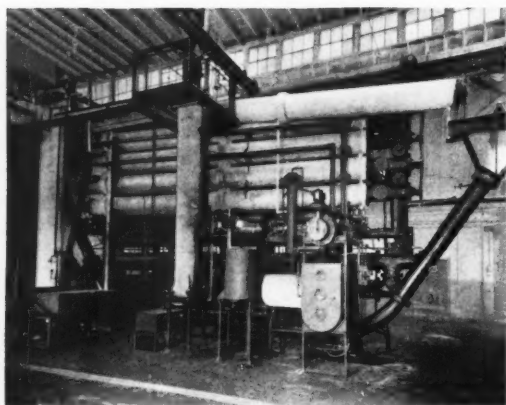
NEW BROKERAGE FIRM

W. J. (Jack) Crutcher, who has been in the brokerage business in Memphis for some time, has announced the formation of his own brokerage firm for dealing in cottonseed and soybean products there. His offices are located at 327 Cotton Exchange Building.

Mr. Crutcher was until recently with Guillory Sales Co. at Memphis.

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OPERATING COST (Per bushel)	1st	2nd	5th	3rd	4th
MAINTENANCE	1st	5th	4th	3rd	2nd
DEPRECIATION	1st	5th	4th	2nd	3rd



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Carl C. Farrington, vice president and manager of the grain department of the Archer-Daniels-Midland Co., Minneapolis, has been elected a director of the company. Farrington was appointed a vice president of Commodity Credit Corporation in 1940.

* * * *

J. E. Spaeth has been elected president of Shellabarger's Inc., Salina, Kans. He had been vice president and secretary.

* * * *

Hugh Ellsworth has been added to the staff of Roesling, Monroe & Co., it is announced by C. H. Smith of that firm. Ellsworth will trade in crude and refined vegetable oils.

* * * *

Ralph S. Moore, executive vice president of Soy Rich Products, Inc., Wichita, Kan., soybean processors, and president of Moore Grain, Inc., which operates a line of country elevators in south central and western Kansas, was reelected president of the Wichita Board of Trade recently.

* * * *

A fractionally distilled soybean type fatty acid particularly for use with alkyl resins, is a new product of General Mills chemical division, Minneapolis, Minn. The product, designated as "Aliphath 34-B", is reported to simplify alkyl resin preparation, shorten processing time, eliminate the need for alcoholysis catalysts, reduce ingredient costs and make possible a greater variety of catalysts.

* * * *

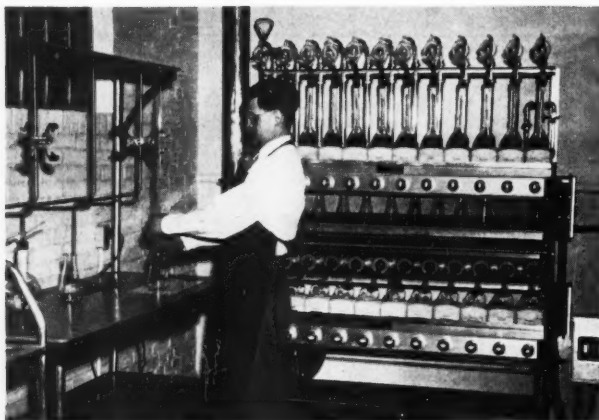
The Chicago Board of Trade has announced the Uhlmann Awards Competition with prizes totaling \$3,000 for the best original research in grain marketing and agricultural economics. A grand prize of \$1,000 will be awarded for the best manuscript appraising the commodity exchange system of free marketing as exemplified by the Chicago Board of Trade.

Richard F. Uhlmann, president of the Chicago Board of Trade announced that the board of directors has elected Lawrence G. Pietrzak, Jr., George D. Egan and James R. Saxton of Chicago to membership.

* * * *

S. S. Adair was elected treasurer of Archer-Daniels-Midland Co., Minneapolis, by the board of directors. Adair was formerly vice president and controller of Commander-Larabee Milling Co., a subsidiary of A-D-M.

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ARTHUR C. BECKEL

Beckel, Worker With Soy Protein, Passes

Dr. Arthur C. Beckel, 52, technical assistant to the director of Northern Regional Research Laboratory, Peoria, Ill., died at St. Francis hospital there May 16. He had been a patient at the hospital since May 7.

Dr. Beckel was employed by the DuPont Co. for a short time and taught at the University of Minnesota and North Dakota State College before being employed by the U. S. Department of Agriculture as a research chemist for the U. S. Regional Soybean Industrial Products Laboratory at Urbana, Ill., in 1937.

He transferred from there in 1942 to Peoria as a chemist in the oil and protein division of the Northern Regional Research Laboratory. In February 1948 he was made technical assistant to the director.

Dr. Beckel was the author of a large number of scientific and technical papers pertaining to his research on soybean protein and related subjects. He also was senior patentee on a recent laboratory discovery of a whipping agent made from soybean protein, and an associate on the patent application now pending on the discovery of the first known gelatin-like material from vegetable protein, a product which has been named "Gelsoy."

The Soybean Digest published an article, "Alcoholic Extraction of Oil from Soybeans," by Dr. Beckel in the May issue.

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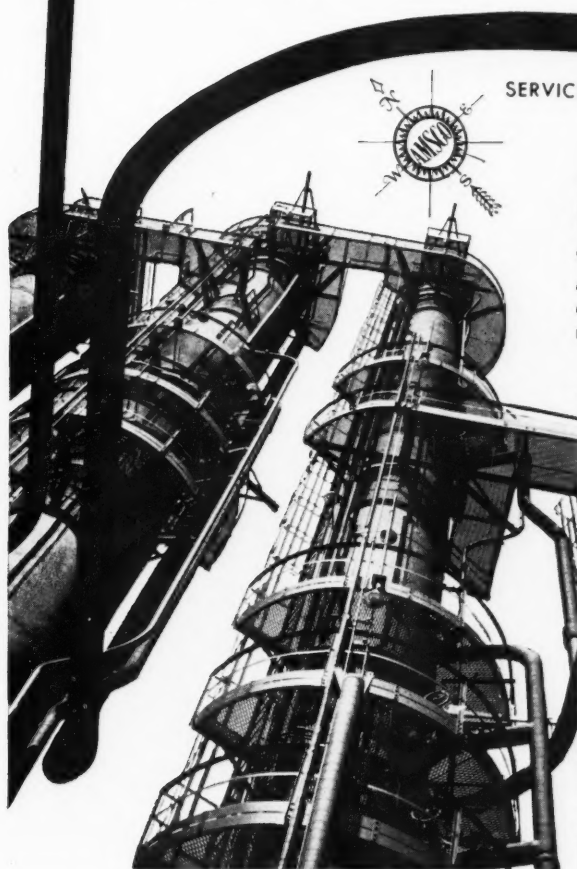
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WASHINGTON Digest

FOR EXPORT. Approximately 14½ million bushels of soybean seed are tentatively programmed for export from the United States to Europe and the Far East under foreign aid programs for the fiscal year beginning July 1.

This total is exclusive of any soybeans that will move during the second quarter of this year, and financed out of foreign aid funds already approved.

The fiscal year estimates must be considered tentative, and subject to considerable change. They are based on requests of European governments and occupied countries, and on the volume that might be financed under full ECA appropriations at mid-May prices.

Actual volume of exports could be altered by any combination of circumstances, including:

Total foreign aid appropriations approved by Congress, outcome of harvests in Europe, any shifts in demands of foreign countries from one commodity to another, and changes in U. S. prices.

Under the House-approved ECA compromise bill, the 15 percent cut in ECA appropriations will remain. However, the President has authority to spend the full amount in 13½ months instead of 15, if needed, then come back for a deficiency appropriation.

If this should be done, the effect would be for Congress to approve a monthly rate of foreign aid expenditures about the same as the President originally requested.

In this case, the tentative schedule of exports of food and agriculture

items would be changed little by the size of funds approved. Even if moderate cuts in foreign aid spending are made, officials anticipate that food and agriculture expenditures will require about the same amount of funds—unless crops are much better than now expected.

The tentative program for U. S. soybean oil exports include 44,092,000 pounds for Europe. There is no breakdown on estimates of soybean oil for the Far East, but the tentative fats and oils program for that area includes 23,626,000 pounds for Japan, and 2,202,000 pounds for the Ryukyu Islands.

Other fats and oils exports tentatively scheduled from U. S. sources for Europe under ECA financing include:

Peanuts 340,941,400 pounds, cottonseed oil 36,640,500 pounds, lard 198,504,000 pounds, tallow 68,342,600 pounds, grease 68,342,600 pounds, fatty acids 77,161,000 pounds, marine oils 6,613,800 pounds, linseed oil 26,455,200 pounds, flaxseed 3,581,300 bushels, other oils 11,794,600 pounds.

Programmed exports to Europe from other than U. S. sources are:

Other Western Hemisphere countries—flaxseed 2,160,000 bushels, linseed oil 114,639,200 pounds, peanut oil 11,023,000 pounds, castor beans 19,600 short tons, lard 22,046,000 pounds, oilicia oil 2,204,600 pounds, rapeseed oil 15,434,200 pounds, sesame seed 19,596,700 pounds, marine oils 26,455,500 pounds, tallows 44,092,000 pounds, sunflower seed oil 23,368,300 pounds, other oils 17,636,800 lbs.

From non-participating countries

By **PORTER M. HEDGE**

Washington Correspondent for
The Soybean Digest

—Phillipine copra 165,100 metric tons, Liberian palm 4,409,200 pounds, Liberian palm kernels 4,400 metric tons, other oils 10,141,200 pounds.

The tentative schedule of exports to Europe from ECA financing of protein feeds from U. S. sources is 386,900 short tons, with 456,700 metric tons coming from other Western Hemisphere sources. Japan is down for tentative exports of 58,353 short tons of soybean cake and meal from the U. S. to be financed with funds for occupied zones.

BEANS UNDER LOAN.

USDA officials estimate that around 8 million bushels of the approximately 10½ million bushels of soybeans put under loan or purchase agreement from the 1943 crop will be delivered to Commodity Credit Corporation; the remainder moved into regular trade channels.

This is a tentative estimate. It's based on an expectation that soybean prices will move up enough in June to encourage some selling from under the loan.

Export outlets are assured for all the soybeans CCC will have to take over in settlement of price support loans.

MARGARINE. The tentative agreement is to have the House-passed margarine tax repeal bill come

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up in the Senate about mid-June—following action on the reciprocal trade measure.

Sponsors of tax repeal feel that passage of the bill is reasonably sure in the Senate, once it gets to the floor.

The bill extends jurisdiction of the Food and Drug Administration to all margarine, whether it moves in interstate commerce or not, and requires labelling of margarine used in public eating places.

NEW COMMITTEE. A new 15-man oilseeds and peanut advisory committee has been appointed by the Agricultural Research and Marketing Administration to advise on research projects.

The new committee combines and supercedes the three former committees of 11 men each on soybeans, peanuts and flaxseed. About half the members have served on one or the other of the old committees.

At the committee's first meeting in June, members were asked to appraise research projects, to advise in what fields work should be expanded, decreased or discontinued, and to make recommendations on new work for 1951. Members of the new committee are:

Otto Brandau, soybean producer, Rudd, Iowa; J. B. Edmondson, soybean producer, Danville, Ind.; Leo Fisher, cotton and soybean producer, Sikeston, Mo.; Argyle McLachlan, manager of the Southwest Flaxseed Association, Imperial, Cal.; Lloyd Melhouse, flaxseed producer, Olivia, Minn.

A. D. Richardson, peanut producer, Floresville, Texas; Charles B. Shuman, president of the Illinois Agricultural Association, Chicago, Ill.; S. E. Statham, peanut and cotton producer, Cobb, Ga.; John H. Bryson, president of the Dothan Oil Mill Co., Dothan, Ala.; Harry J. Deuel, Jr., head of biochemistry at the University of California, Los Angeles.

T. H. Gregory, executive vice-president of the National Cottonseed Products Association, Memphis, Tenn.; Howard Kellogg, Jr., president of Spencer Kellogg & Sons, Inc., Buffalo, N. Y.; Charles H. Murden, head of the peanut department, Planters Nut and Chocolate Co., Suffolk, Va.

Val Wurtele, president, Minnesota Paints, Inc., and vice-president of the Minnesota Linseed Oil Co., Minneapolis; William H. Fischer, manager, peanut butter division, Jewett and Sherman Co., Milwaukee, Wis.

Co-op Processors Meet at Peoria

Cooperative soybean oil mill operators, representing their organizations in 11 Midwestern Southern and Eastern states, held their second annual conference at the Northern Regional Research Laboratory in Peoria, Ill., May 5-7. Representatives of the Northern Laboratory and the U. S. Department of Agriculture were also in attendance.

The conference, arranged by the cooperative research and service division of Farm Credit Administration and the Laboratory, dealt with oilseed processing, recent results of research on soybean varieties and improvements in both soybean oil and oil meal for food and industrial uses.

The opening day's program included discussions on soybean variety research at the U. S. Regional Soybean Laboratory at Urbana, Ill., by J. L. Cartter, the director.

He was followed by four members of the Northern Laboratory staff: Dr. A. K. Smith, discussing soy foods in the Orient; O. L. Brekke, describing preparation of soybean oil meal for nutritional studies; Dr. C. D. Evans, explaining studies on the influence of metals on edible soybean oil; and Dr. H. M. Teeter giving results of new modifications of soybean oil for use in paints.

Chairman of the meetings the last two days was Dr. Ward B. Fetrow, Farm Credit Administration, Washington, D. C. Representatives of the cooperative mills discussed such problems as financing, mechanical and solvent extraction of oil, procurement of beans and disposal of products, and operating costs.

Those on this part of the program: C. E. Robinson, Commodity Exchange Authority, New York City; Edward Olson, manager Boone Valley Cooperative Association, Eagle Grove, Iowa; Karl Nolin, manager Farmers Cooperative Association, Ralston, Iowa; G. W. Allen, manager Ohio Valley Soybean cooperative, Henderson, Ky.; Elmer H. Ruehrup, manager Alhambra Grain & Feed Co., Alhambra, Ill.; and D. H. McVey, agricultural economist cotton and oilseeds section, cooperative research and service division, Farm Credit Administration.

States represented were Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Missouri, Minnesota, Nebraska, Ohio and Pennsylvania.

CHEMURGISTS ELECT

Dr. W. L. Burlison, head of the department of agronomy, University of Illinois, and Arnold P. Yerkes, International Harvester Co., were elected vice presidents at the meeting of the 14th annual conference of the National Farm Chemurgic Council held in Memphis, Tenn., recently. John W. Ticknor was elected treasurer and assistant to the president.

One of the highlights of this meeting was a pre-conference "chemurgic dinner" featuring foods prepared by processes developed in the Regional Research Laboratories.

Market Street

We invite the readers of **THE SOYBEAN DIGEST** to use "MARKET STREET" for their classified advertising. If you have processing machinery, laboratory equipment, soybean acid, or other items of interest to the industry, advertise them here.

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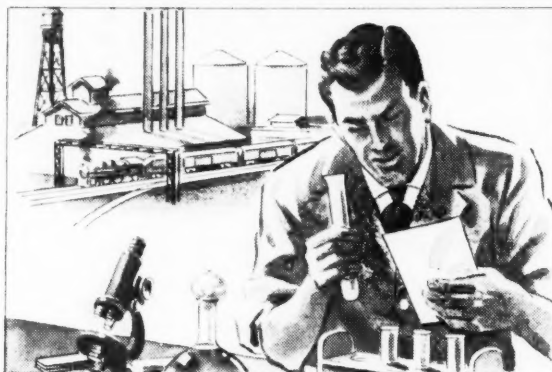
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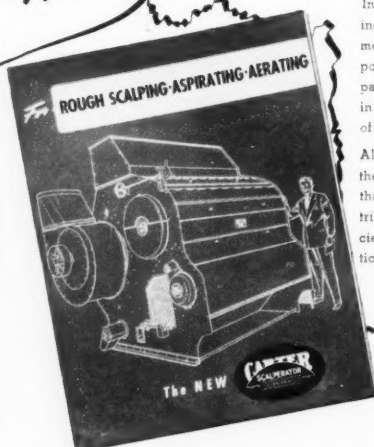
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Always a leader among receiving machines for grain elevators, the Carter Scalperator has been still further improved. All changes have been based on actual operating experiences over a period of years. Complete descriptions along with operating and installation data will be found in a new 8-page catalog offered free on request. The new Scalperator handles three major operations without change of equipment. It (1) rough scalps soybeans at high capacity; (2) aspirates beans as they go to storage; (3) cold-blends beans following the dryers. Write for free 8-page folder now.

IMPORTANT SCALPERATOR IMPROVEMENTS

1. Features the use of Mechanically sealed ball bearings.
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In The MARKETS

BEANS LOSE EARLY GAINS

The soybean market gained ground the fore part of May only to weaken later. Price trend was generally up the first three weeks with a spread of 15c in May No. 2 soybeans.

Soybean oil meal and oil were about steady though they followed the bean market to some extent. All three markets showed some weakness the last week in May.

Only a limited amount of cash soybeans were offered on the market in May, as country movement was not large.

May No. 2 soybeans Chicago opened at \$2.27, the month's low; and closed at \$2.43, the high, May 21. July No. 2 soybeans opened at \$2.18, and closed at \$2.162, the low. High was \$2.28 May 17.

Bulk 41% protein soybean oil meal Decatur basis opened at \$61 and closed at \$58, the low. High was \$63 May 13-16. There was little spread between 41% and 44%.

Production of 44% protein soybean oil meal was reported by Production and Marketing Administration to be at capacity. Most screw presses, which produce 41%, were closed down, according to PMA.

Use of the Memphis futures market was about double the same time last year, according to Cotton Trade Journal. Activity was meager in the cash market the last week of May, and the price undertone was weak.

Something of a wait-and-see attitude has developed in the vegetable oil trade until more is known about 1949 oil-seed acreages. The trade is watching closely the trend in use of Economic Cooperation Administration funds for purchases of fats and oils.

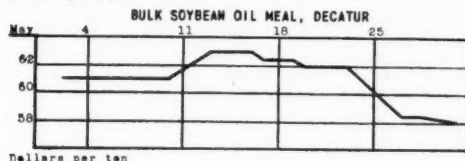
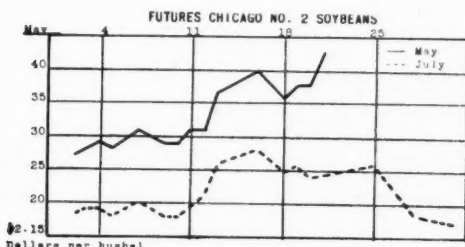
Crude soybean oil in tankcar lots opened at 10³/₄c per lb. and closed at 10 for the month, though it was priced at 11c at times during May.

There was a spread of 4-5c between coconut and cottonseed and soybean oils.

SOYBEAN OIL MEAL FUTURES CLOSINGS MEMPHIS MAY 31*

July, flat 56.00; Oct., flat 51.50; Dec., flat 50.25; Jan., flat 49.50; Mar., flat 49.25. Sales: 3,000 tons.

*Reported by the Chicago Journal of Commerce.



FAST IN TWO SENSES



Because the Super-Concrete Staves lay up readily, Neff & Fry Storage Bins are erected fast; i.e., in a comparatively short time.

The staves interlock together firmly. The tiers are securely bound with heavy galvanized steel rings. The materials are enduring. So Neff & Fry Bins stand fast; i.e., ruggedly, for a long time.

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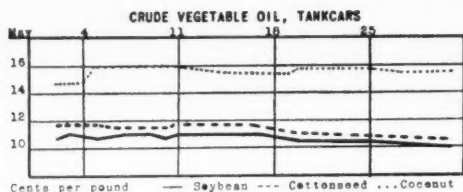
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Disappearance of soybeans October through March this season at 108 million bushels was the largest of record, reflecting heavy exports and crushings. However, stocks of soybeans on April 1 were the largest April 1 stocks since 1943 because of the large 1948 crop. Prices of soybeans at country shipping points this season have averaged \$2.35 per bushel or 37 percent less than the same months last season, reports Production and Marketing Administration, U. S. Department of Agriculture.

A good export and domestic demand for oil and large supplies of soybeans resulted in the largest crushings of record. Crushings, as reported by the Census Bureau, totaled 96 million bushels in the first 6 months of the 1948-49 season. This is 8 million bushels larger than during the same months last season and 19 million bushels more than the average (1942-46) for these months. Exports of soybeans have been heavy, amounting to over 10.8 million bushels in the first half of the season. Exports in the same period last season totaled 1.8 million bushels, while the 5-year average for these months is 1.3 million bushels. The Bureau of Agricultural Economics in its Farm Disposition report estimates that 3,190,000 bushels of soybeans will be fed on farms where grown by farmers from the 1948 crop. This compares with an estimate of 2,315,000 bushels fed from the 1947 crop.

Production of soy flour and grits, as reported by the Bureau of the Census, totaled 22,824,000 pounds in the January-March 1949 quarter. Of this 2,020,000 pounds were full fat flour and the remainder other types. Production of soy flour and grits in the October-December quarter, calculated from trade reports, totaled about 50 million pounds. Production for the 1947-48 season totaled 675 million pounds. Exports of soy flour amounted to 43,682,114 pounds in the January-March quarter, 140,172,534 in the October-December quarter, and 594,136,105 pounds in the season beginning October 1947. Included in the soy flour exports are 46,682,000 pounds of soybean meal shipped to Japan by the Department of the Army for civilian relief feeding in the October 1948-March 1949 period and 115 million pounds in the 1947-48 season.

• SOYBEAN STOCKS. Production and Marketing Administration's commercial grain stocks reports for May 2-23.

	May 2	May 9	May 16	May 23
Atlantic Coast	546	244	343	465
Gulf Coast	632	332	226	270
Northwestern and Upper Lake	158	113	88	103
Lower Lake	668	647	576	786
East Central	1,139	1,011	908	929
West Central				
Southwestern & Western	673	647	632	612
Total	3,816	2,994	2,772	3,165
Total Year Ago	4,351	3,860	3,350	2,982

About 114 million bushels of soybeans remained in all storage positions on April 1, 1949, the Bureau of Agricultural Economics reports. These April 1 stocks were 29 percent larger than a year earlier and the largest for the date since 1943.

Included in these current stocks are 36.3 million bushels at processing plants, as enumerated by the Bureau of the Census, and commercial stocks of 7.2 million bushels at terminals, reported by the Production and Marketing Administration. The Crop Reporting Board estimated that 19.2 million bushels were stored in interior mills, elevators and warehouses and 51.6 million bushels remained on farms. These farm stocks are the largest April 1 stocks since 1943. Stocks at terminals are relatively small, but those in other off-farm positions are not far from the usual April 1 level.

STOCKS OF SOYBEANS, APRIL 1, WITH COMPARISONS

Position	Apr. 1 1947	Apr. 1 1948	Apr. 1 1949	Apr. 1 1949
		Thousand Bushels		
On Farms (1)	25,475	32,110	74,590	51,644
Terminals (2)	13,689	7,613	14,804	7,206
Processing Plants (3)	41,744	36,857	55,564	36,305
Int. Mills, Elev. & Whses. (1)	19,633	10,845	36,740	19,223
TOTAL	100,541	88,425	181,698	114,383

(1) Crop Reporting Board.

(2) Grain Branch, P.M.A.


(3) Bureau of the Census.

¹ All off-farm storages not otherwise designated.

OFF-FARM STOCKS OF SOYBEANS, APRIL 1, WITH COMPARISONS

State	Apr. 1 1948	Apr. 1 1949	Apr. 1 1949
		Thousand bushels	
Ohio	5,623	9,230	6,961
Indiana	3,900	9,968	4,838
Illinois	21,709	38,956	22,084
Minnesota	3,245	6,253	4,391
Iowa	9,520	17,586	10,850
Missouri	3,428	5,120	3,825
Kansas	302	545	561
Virginia	198	860	129
North Carolina	35	875	462
Kentucky	36	2,764	1,748
Tennessee	1,289	2,245	60
Mississippi	172	579	85
Arkansas	916	1,756	1,249
All Other States	4,842	10,371	5,508
U. S.	55,315	107,108	62,739

¹ Includes stocks at processing plants, as enumerated by the Bureau of the census; commercial stocks at terminals, reported by the Grain Branch, P.M.A.; and stocks in interior mills, elevators and warehouses, estimated by the Crop Reporting Board.



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market bulletins

● **SOYBEAN GLUE.** Consumption of soybean glue by the softwood plywood industry in March was 2,646,000 lbs. compared with 2,421,000 lbs. in February, and 2,605,000 lbs. in March 1948.

Consumption of phenolic resin glue was 2,916,000 lbs. in March compared with 1,925,000 lbs. in February, and 4,310,000 lbs. in March 1948. Total consumption of all glues by the plywood industry in March was 6,391,000 lbs. compared with 5,032,000 lbs. in February, and 7,636,000 in March of 1948.

SOFTWOOD PLYWOOD MANUFACTURERS CONSUMPTION OF GLUE BY TYPE, 1942-46
(Thousands of Pounds)

	Total all Types	Casain	Soybean	Phenolic Resin	Other
Total 1946	55,970	5,468	23,817	24,743	1,922
Total 1945	47,302	3,287	22,473	19,393	2,149
Total 1944	55,941	1,935	27,879	23,067	3,060
Total 1943	53,151	3,936	26,086	19,764	3,365
Total 1942	61,736	3,595	37,390	17,262	4,499

● **SOYBEAN PRODUCTS USAGE.** Factory production of crude soybean oil in March totaled 167,629,000 lbs. compared with the February total of 151,137,000 lbs., reports Bureau of the Census.

Factory consumption of crude soybean oil totaled 151,644,000 lbs. in March compared with 136,607,000 lbs. in February.

Production of refined soybean oil was 137,081,000 lbs. in March, 125,950,000 lbs. in February. Consumption of refined soybean oil was 130,314,000 lbs. in March, 103,591,000 lbs. in February.

Factory and warehouse stocks of crude soybean oil totaled 128,019,000 lbs. Mar. 31; 140,245,000 lbs. Feb. 28. Factory and warehouse stocks of refined soybean oil totaled 128,377,000 lbs. Mar. 31; 119,744,000 lbs. Feb. 28.

SOYBEANS: RECEIPTS, CRUSHINGS AND STOCKS AT OIL MILLS, BY STATES, MARCH 1949-FEBRUARY 1949
(Tons of 2,000 pounds)

State	Receipts at mills	Crushed or used	Stocks at mills
	March 1949	February 1949	March 31, 1949
U. S.	267,659	306,413	510,956
Arkansas	(1)	534	9,535
Illinois	129,268	154,076	193,879
Indiana	15,749	16,038	40,444
Iowa	55,337	51,732	77,208
Kansas	12,070	8,896	13,294
Kentucky	1,586	4,538	14,347
Minnesota	10,873	3,849	33,406
Missouri	11,057	12,729	16,402
Nebraska	1,153	1,988	4,975
North Carolina	563	1,344	7,342
Ohio	27,366	33,375	55,361
Oklahoma		1,959	2,869
Texas	3,601	250	5,862
All other	11,017	16,105	35,911

¹ Receipts exceeded by reshipments of beans previously received and held in the State. U. S. Receipts are on a net basis, excluding transfers between mills.

PRIMARY PRODUCTS EXCEPT CRUDE OIL, AT CRUDE OIL MILL LOCATIONS: PRODUCTION, SHIPMENTS AND TRANSFERS AND STOCKS, MARCH 1949

Products	Unit of measure	Production March 1949	Shipments and March transfers 1949	End of month stocks Mar. 31, 1949
Soybean:				
Cake and meal	tons	403,904	410,952	24,021
Lecithin	lbs.	1,085,017	1,054,253	1,037,505
Edible soy flour, full fat	tons	362	411	142
Edible soy flour, other	tons	3,306	3,209	1,999
Industrial soy flour	tons	(1)	(1)	(1)
Cottonseed				
Cake and meal	tons	209,422	205,768	95,907

¹ Not shown to avoid disclosure of individual operations.

RAW MATERIALS AT OIL MILLS: RECEIPTS, CRUSHINGS AND STOCKS, MARCH 1949-FEBRUARY 1949
(Tons of 2,000 pounds)

Raw materials	Receipts at mills	Crushed or used	Oil mill stocks end of month
	March	February	March
Soybeans	267,659	306,413	510,956
Cottonseed	93,651	114,775	472,689
Peanuts			519,611
Shelled			6,060
Unshelled			1,587
Corn Germs	26,049	23,999	26,390
Copra	22,207	16,609	25,148
Flaxseed	28,170	43,227	88,942
Tung nuts	8,638	12,634	10,415
Castor beans	10,716	9,769	13,996
Olives	3,263	5,979	3,851
Other	9,117	10,025	12,056

¹ Bureau of Agricultural Economics, U. S. Department of Agriculture, collected data on crushings of peanuts. * Revised.

SOYBEAN PRODUCTS: PRODUCTION AND STOCKS AT OIL MILL LOCATIONS, BY STATES, MARCH 1949

State	Crude oil (thousand pounds)	Cake and meal (tons)
	Production	Stocks
	March 1949	March 31, 1949
U. S.	167,629	45,056
Arkansas	2,726	1,631
Illinois	65,291	15,846
Indiana	13,174	2,387
Iowa	25,571	7,550
Kansas	4,477	1,312
Kentucky	4,793	612
Minnesota	11,876	2,054
Missouri	5,064	866
Nebraska	1,587	1,142
North Carolina	1,996	1,524
Ohio	17,777	4,409
Oklahoma		
Texas	1,671	766
All other	11,626	4,957

¹ Included in "All other" to avoid disclosure of individual operations.

● **SHORTENING SHIPMENTS.** Reported by Institute of Shortening and Edible Oils, Inc., in pounds.
Week ending Apr. 30 5,124,578
Week ending May 7 4,953,711
Week ending May 14 5,405,457
Week ending May 31 5,130,241

Grand total of shortening and edible oil shipments for April was 257,492,000 lbs., the Institute reports.

D. J. GUILLORY L. PAT LOBBAN
Guillory Sales Company

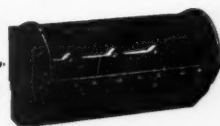
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"DP" - "OK" - "CC" - "V" ARE MADE STRONGER will LAST LONGER

have GREATER CAPACITY and will operate more efficiently at less cost than other elevator cups.



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for names of distributors and analysis form No. 20

LETTERS

THE FIRST PROCESSORS

TO THE EDITOR:

We have checked the item on page 62 of your March issue of *The Soybean Digest* wherein the statement was made that Gus Staley was the first man to promote and process the soybean in the United States. I am sure you are well aware this is not the true historical fact.

We do not want to take any credit away from the A. E. Staley Manufacturing Co. as to their interest and effort put behind the soybean crop in the early years, for they were very instrumental in helping to promote the soybean processing program.

The early processing of soybeans in 1911 by Herman Meyer, a small crusher in Seattle, and later in 1915 by the Elizabeth City Oil and Fertilizer Co. at Elizabeth City, N. C., and again the Havens Oil Co. at Washington, N. C. in 1916, all should be recognized as the first in the field to really crush soybeans and press the oil out, in a small way.

We should, however, give due credit to I. C. Bradley for being one of the true pioneers in the processing of soybeans as a commercial crop in this country of ours. He is the one who started the processing of beans, when it took hold as a crop that later developed into its present general use. Mr. Bradley is the oldest continuous processor in the United States.

In 1924 Funk Brothers Seed Co. purchased this equipment and brought it here to Bloomington and brought along with it I. C. Bradley, wherein we continued to put forth effort to get beans grown for processing purposes. These early years were trying ones for at no time could we secure enough beans to process throughout the entire year and feed manufacturers did not want to use the meal in their formulas unless they were able to secure soybean oil meal the year round.

The A. E. Staley Mfg. Co. started in 1922 as it has been recorded, and they too had some of the same problems which we encountered.

One of the most outstanding men in the soybean history and one who could truly be called the Father of the U S A Soybean, is none other than Bill Morse of the USDA. He was one of the first to see the possi-

bility of soybeans as a crop and has taught and preached the value of them practically ever since he graduated from college.

Another gentleman whom we also should recognize as a father of the soybean crop is Prof. W. L. Burlison at the University of Illinois. His work in soybean oil and its utilization is outstanding and he like Bill Morse has always had soybeans as one of his hobbies.

In addition to the above men we cannot leave out Ed Dies as one who has been a true general in guiding the processors through their many problems in the stages of the processing of beans when there were many problems and individual jealousies amongst the processors during the National Soybean Processors Association growing period.

I have not tooted our own horn very much in this soybean program, but my father spent a lot of his time in trying to promote and guide the soybean crop throughout its early stages. We have records of selling soybean seed as early as 1903. This of course was for planting beans in corn only on a small scale. We promoted the use of inoculation of soybeans using dirt from soybean fields as our first method of applying inoculation.

I concur in "Soybean" Johnson's idea that Bill Morse ought to be in some way connected with the name. —Gene Funk Jr., Funk Bros. Seed Co., Bloomington, Ill.

A. H. Harris of A. E. Staley Manufacturing Co. suggested in the March issue that Little Asa be named "Gus Soya." For further discussion of early soybean processing see this page in the April and May issues. Also see September 1944 issue of the *Digest* for a history of soybean processing.—Editor.

ABOUT STRAW SPREADERS

TO THE EDITOR.

(Referring to the) editorial, "Job for Harvester Firms," which appeared in the (May) *Soybean Digest*. We are in thorough agreement with you as to the problem but we do not believe the solution is as simple as your conclusion, "No combines should be offered for sale in soybean production territory without a straw spreader which works."

With full-width combines, and our No. 12-A 6-ft. combine is a combine of that class, the crop is cut and laid back on the ground from which it was taken and no straw spreader is necessary. A straw spreader on such

a machine would spread the material onto the uncut crop. Even distribution of straw can be helped by even feeding the machine. In down beans this can be helped by the use of a pick-up type reel such as the Hume or Cropsaver.

It is characteristic of some combines to drop the straw in bunches and we have not yet seen a straw spreader that will thoroughly tear



No. 12-A 6-ft. John Deere Combine.

such bunches apart and spread them satisfactorily.

There is also some question if any combine was ever equipped with a straw spreader that will work well under all conditions. At the beginning of the harvest, beans in many localities are harvested before there is a frost. The beans are ripe but the stems are tough. No straw spreader will satisfactorily handle straw in this condition. Not only will the spreader do an inferior job but there will be winding and clogging.

Many of the objectionable bunches which are difficult to plow under are those which result from stopping to empty grain tank, to relieve clogging, or stops for any purpose for that matter. A straw spreader does not help that situation materially.

You can be sure of our cooperation in helping to solve this problem, but a straw spreader, even one that works 100 percent if there is one, is not the total answer.—E. W. Keat, sales manager, John Deere Harvester Works, East Moline, Ill.

NEED WORK IN DEEP SOUTH

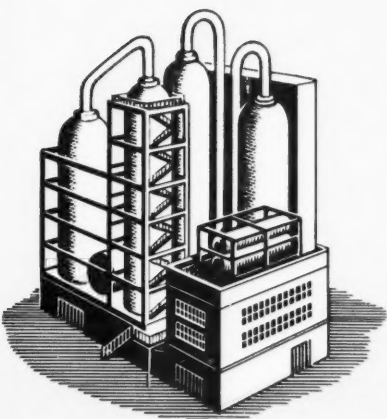
TO THE EDITOR:

I am subscribing for your publication which is very good, but the Association is doing most of its work above the Mason Dixon line—and Brother there is lots to be done in the Deep South.—William H. Hunt, Rt. 2, DeWitt, Ark.



From BEAN to BONANZA

VIA BLAW-KNOX METHOD OF SOLVENT EXTRACTION



THE processing of such oil-bearing seeds as soya, cotton, peanut and tung has been brought to a high pitch of efficiency by a group of Blaw-Knox engineers *specializing* in this important field . . . If you are in any way concerned with the operational or financial phases of oil extraction we will be glad to give you the facts and figures which resulted in Blaw-Knox being selected to build *more than 80%* of the new soybean solvent extraction plants contracted for in 1948.



Solvent extraction is but one of many processes for which Blaw-Knox designs, procures, and builds complete plants to improve products and increase earnings.



CHEMICAL PLANTS
Division of **BLAW-KNOX**
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"DOC" MacGEE SAYS:

What's the real test, the final proof, of the worth of any product or service? To

the user of industrial solvents, the answer lies in the measure of operating efficiency, economy, and quality of final product his solvents are bringing about.

In many cases, the degree of purity, uniformity, close boiling ranges, and freedom from foreign tastes and odors largely determine how smoothly, how efficiently, how successfully, and how economically a plant is operating. And, in case after case where this is true, users are switching to SKELLYSOLVE . . . because they are seeing how SKELLYSOLVE is helping countless other plants save money and produce better products.

That's the "proof of the pudding," the honest test, of SKELLYSOLVE. It won't take you long to discover the advantages of SKELLYSOLVE'S purity, uniformity, close boiling ranges, and freedom from foreign tastes and odors. It won't take you long to realize the value of SKELLYSOLVE'S famed dependability of supply—which virtually assures you of an uninterrupted supply, even when emergencies arise.

And, should you ever desire competent counsel on production problems, or should unusual trouble suddenly develop, you will quickly see what it means to have available the skill and experience of trained SKELLYSOLVE Technical Fieldmen.

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